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SECOND HALF OF 1917—No. 25

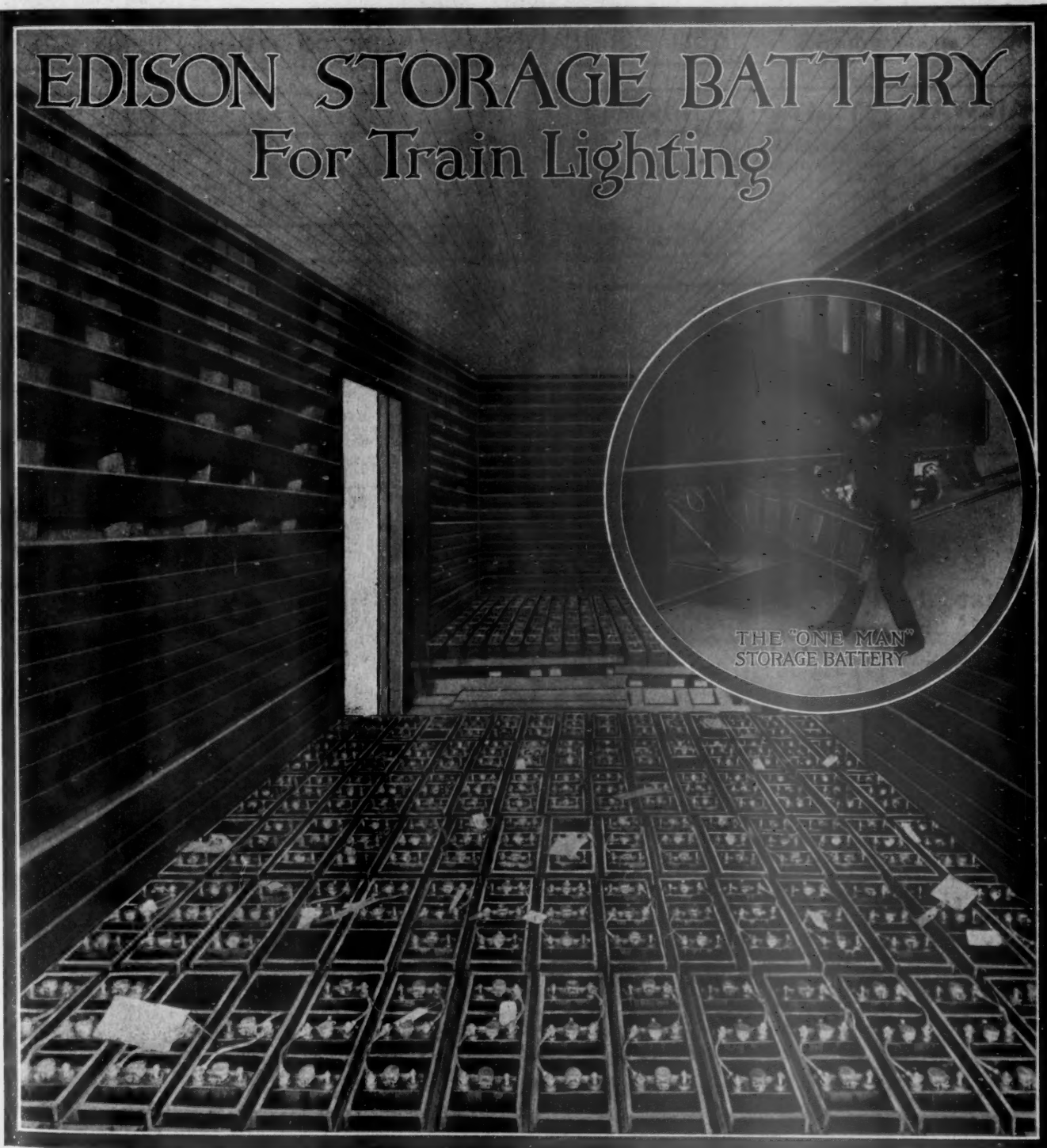
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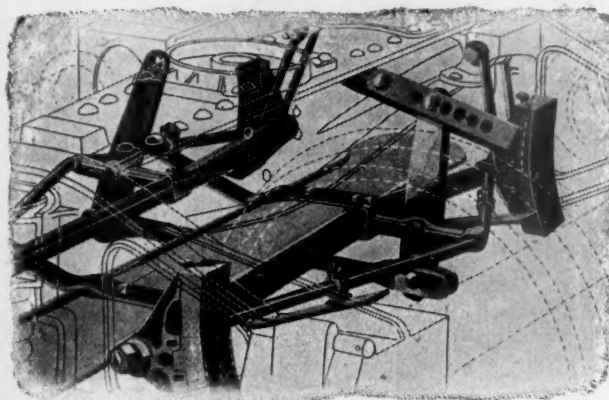
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Railway Age Gazette

Volume 63

December 21, 1917

No. 25

Table of Contents

EDITORIALS:

The Co-ordination of All Transportation Agencies.....	1111
A Rule That Works Both Ways.....	1111
A Noteworthy System of Fuel Records.....	1112
An Unprecedented Six Months' Record.....	1112
The Truth About the Coal Situation.....	1112
The War and Engineering Students.....	1114

NEW BOOKS	1114
-----------------	------

LETTERS TO THE EDITOR:

Mr. Warfield Replies to an Editorial.....	1115
The Coal Situation—A National Menace.....	1115
Mr. Kruttschnitt on the Rate Depreciation.....	1116
Perishable Terminals; G. C. White.....	1116

*Illustrated.

A Representative Commission: C. E. Newell.....	1117
The Upper Berth Problem; G. H. Corse, Jr.....	1117

MISCELLANEOUS:

The British Railways Under Government Control; F. A. McKenzie..	1118
Freight Operations for Six Months.....	1122
Railroad Views on the Valuation Act.....	1123
Coal Mine Production Shows a Net Decrease.....	1129
Supplies for an Army of One Million.....	1130
*Fuel Record on the Baltimore & Ohio; W. L. Robinson.....	1131
Work to Relieve Congestion.....	1136
State Commissioners Before Newlands Committee.....	1137
Engineers Praised by Field Marshal Haig.....	1138
*A Unique Coaling Plant.....	1139
*Settlement of Railroad Problem Delayed.....	1140

GENERAL NEWS SECTION.....	1143
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Unprecedented war-time traffic has produced a crisis which calls for the intensive utilization and co-ordination of all existing transportation facilities, as well as the conscientious and intelligent co-operation of the public and the carriers. The organization of the Railroads' War Board, the pooling of box cars, the substantial results achieved by shippers and railroads alike in effecting heavier car-loading and in diminishing delays in car movement, the release of locomotives and fuel for freight traffic by reductions in passenger service, and the pooling of facilities on lines in Official Classification territory are important steps which have already been taken to increase the carrying capacity of the railways. In addition, plans are under way for the more extensive use of electric roads, highways and waterways for the movement of freight. A Highway Transportation Committee, recently appointed by the Council of National Defense, is studying the possibilities of motor truck transportation as an auxiliary to the railroads. As the success of the motor vehicle as a freight carrier depends on the condition of our highways some modification of the recent priority order denying the use of open top cars for materials needed for highway construction may be desirable. The formation of the Electric Railways War Board was recently noted in the *Railway Age Gazette* and the steps taken under the direction of that body to organize electric railway facilities for freight transportation were outlined in the *Railway Age Gazette* of December 7, page 1048. It is worthy of note that the electric lines, which have a total operated length of about 40,000 miles, do not intend to undertake freight movement separately from the steam lines but will endeavor to co-operate with them to the end that traffic may be moved most expeditiously and with the least danger of congestion. Through the influence of the United States Food Administration shipping on the Great Lakes, which usually stops on December 1, will continue, in part, as long as weather conditions permit. All these developments are in the direction of maximum transportation efficiency and greater co-ordination of different kinds of carriers, at the same time pointing to further possibilities of

improvement in the future. It is patent that war conditions will not brook competition between carriers of the same kind or of different kinds, but they call for the operation of all transportation agencies as parts of a great whole, laboring under a tremendous burden which must be borne successfully until the war is won.

By a little deft cross-examination of J. F. Shaughnessy, of the Nevada Railroad Commission, on his testimony before the Newlands Committee this week, Senator Cummins punctured rather effectively the argument of the intermountain interests that Congress should pass a law containing a rigid long and short haul prohibition. Mr. Shaughnessy and other representatives of the intermountain section are asking Congress to enact a general rule, which would upset commercial conditions in all parts of the country, for the benefit of their own section. They ask that the railroads be prohibited from charging a higher rate for the short haul from the east to the interior than they charge to the Pacific coast to meet water competition. Senator Cummins asked the witness, as he had asked several other intermountain witnesses at the San Francisco hearing, why he had stopped at asking a prohibition of a higher charge, and why he had not asked that as high a charge for a short haul as for a long haul be forbidden. Mr. Shaughnessy, as had several of the other witnesses, replied that the intermountain country could "get along very nicely on equal rates" westbound, and that it wanted a continuance of the blanket rate system eastbound. Senator Cummins then pointed out that the argument for a rigid long and short haul clause, carried to its logical conclusion, would condemn all blanket rates, and that Congress could not pass special legislation but must act according to a general principle, such as a declaration that rates should be based on cost of service, or be made on a mileage basis. Mr. Shaughnessy did not care to go that far because the extension of his argument to its logical conclusion, while conferring one advantage on his section would take away another! No section or community ever finds fault with disregard of distance in rate-making

when the result is to favor it at the expense of competing sections and communities; but how wrong and downright vicious is disregard of distance when it helps competitors at the expense of the very same section or community!

Fuel economy in its broadest sense is an operating problem of direct interest to the transportation department. The

A Noteworthy System of Fuel Records

cost for fuel is a matter that every operating officer and particularly the division superintendent should watch closely, especially at this time; adequate records are necessary for this purpose. The division superintendent who seeks to lower the cost of operation must have available fuel statistics in sufficient detail to permit the consideration of this expense, as well as that of labor or any other expense, whenever he has any changes in operation in mind. An exceptionally good method of doing this was described in a paper by W. L. Robinson, supervisor of fuel consumption of the Baltimore & Ohio at a recent meeting of the New England Railroad Club, an abstract of which appears elsewhere in this issue. At a cost of 0.45 cents per ton of coal information is provided which may be considered as a barometer of the mechanical operating conditions on the road and which keeps the operating officers in close touch with the cost of fuel—the largest single item of operating expense. Among other things, a poor fuel performance is indicative of improperly maintained power, improper handling of trains, a poor quality of coal, or a lack of proper instruction of engine crews. This is what an operating officer should know and it gives him the opportunity of detecting the weak places in his organization. At the same time this system of fuel records shows the men on the locomotives that their work is being constantly watched; it shows the road foremen of engines which men need special supervision and instruction; and it brings out the mechanical defects of locomotives which affect fuel consumption for the benefit of the repair forces. The work on the Baltimore & Ohio is under the direction of a staff officer who reports directly to the operating vice-president. This brings the fuel problems before the operating staff in their true light and makes this question an operating problem instead of purely a mechanical department one.

AN UNPRECEDENTED SIX MONTHS' RECORD

APPROXIMATELY complete statistics of freight movement during the first six months after the United States entered the war—that is, April to September, inclusive—which have been compiled by the Bureau of Railway Economics for the Railroads' War Board, disclose that in that period the railways not only handled far more traffic than in any earlier six months of their history, but also as much as in any entire year prior to 1907.

It will be recalled that the years 1906 and 1907 marked the climax of a long period of rapid increase of railroad business which resulted in the longest and most acute congestion of traffic and "shortage" of cars ever known until recent months. It is, therefore, not without significance that in the first six months of 1917 after the country entered the war the railways handled as much freight as they did in the entire year 1906.

In 1915 the railways handled only 30 per cent more freight than in 1906, while in 1917 they are handling approximately 100 per cent more than they did in 1906. These facts illustrate not only the enormous increase which has occurred in railway freight business during the past eleven years but also how swiftly the bulk of the increase has come within the last two years.

The total number of tons of freight handled one mile in the six months April to September by Class I roads han-

dling about 95 per cent of the freight traffic of roads of that class was 204,702,861,865. This is an increase of 14 per cent over the freight business handled by the same roads in the same months of 1916. The increase in the average tons hauled per car was from 24.8 to 27 tons, or 9 per cent, and the increase in the average tons hauled per train was from 626 tons to 675 tons, or 7.8 per cent.

It is interesting, as indicating the increase in the efficiency of railroad operation which has occurred since 1906, to note that in that year the average freight train load was only 344 tons, as compared with the record of 675 tons per train made in the months, April to September. If the railroads had moved the traffic of these six months of 1917 in the same average trainload as they handled the freight of 1906, they would have had to render in these six months about 96 per cent more freight train service than they actually did render. They ran freight trains 330,000,000 miles in that six months. On the basis of the trainload of 1906 they would have had to run them about 645,000,000 miles.

The economy effected by this increase of the average trainload and the resulting saving of freight train service is the only thing which has enabled the railway system of the country to remain solvent in the face of almost stationary freight and passenger rates, and enormously increasing expenses of all kinds. Of course, economies have been effected by other means than increases of the trainload, but it is by this means that the really big saving has been made.

The labor brotherhoods are opposed to the big trains. The government apparently is soon going to take control of the operation of the railroads. In view of the attitude of the brotherhoods it will be highly interesting to see what policy the government railroad controller, if one is appointed, will adopt with reference to increases in trainloads.

THE TRUTH ABOUT THE COAL SITUATION

THE National Coal Association by its secretary, J. D. A. Morrow, has written the *Railway Age Gazette* a letter which appears elsewhere in this issue. It is in reply to the editorial, entitled "The Coal Situation—A National Menace," which was published in our issue for November 30.

The impression which many persons have been given by what has been said in the newspapers is that there has been an actual reduction this year in the amount of coal mined and transported. No impression could be more erroneous. The coal production of 1916 was the largest up to that time. Data regarding the amount of coal moved by the railways are available for the months, April to November, 1917, inclusive. In those eight months 175,986 more carloads, or about 10,000,000 more tons, of anthracite were moved than in the same months of 1916, an increase of 15 per cent. In the same months 925,691 more carloads, or about 51,000 more tons, of bituminous coal were moved than in the same months of 1916, an increase of 18 per cent.

Formerly large amounts of coal were carried by vessels on the Great Lakes, in the coastwise service, and running between the Atlantic and Pacific coasts through the Panama canal. Most of these vessels have been diverted to trans-oceanic service. In consequence, not only have the railways had to meet an increase in the output of coal, but they also have had to carry vast amounts of coal which formerly were carried by water. It is an illustration of the unfairness of Dr. Garfield, the government fuel administrator, and other persons who attribute the present coal situation to the shortage of transportation facilities, that they always talk about the alleged "car shortage" but never about the vessel shortage. The reduction in the amount of coal being carried by water has not only made it necessary for the railways to carry more tons of coal than formerly, but has also made it necessary for them to carry it a greater average distance: for the sections to which the boats carried the most coal—

the Pacific coast, the Northwest, and New England—are all relatively remote from coal mines. This increase in the tonnage to be moved and in the distance it has had to be moved have imposed a double burden on the car supply.

And, unfortunately, neither the government Fuel Administration nor the coal producers have shown the inclination or constructive ability which they should have shown in lightening the burden on the railways. There is a great deal of "cross hauling" of coal. Instead of coal being consumed almost entirely in the territories adjacent to the mines in which it is produced it wanders all over the country seeking its markets. West Virginia coal often passes almost directly through the great Illinois and Indiana field to the Northwest, and Illinois and Indiana coal coming eastward meets it on the way. Coal from the Pittsburgh field passes directly through the great coal mining districts farther east on its way to New England, and meets coal from those eastern fields going west.

This cross hauling of coal was not intolerable, or perhaps even undesirable, before the war. It has become intolerable since we entered the war because of the enormous waste of transportation which it involves. The remedy for it is to restrict the movement and consumption of all coal, except special kinds needed for special purposes, to the immediate zones within which it is produced. A large saving of transportation and increase of coal production could be secured in this way; and the adoption of some such scheme repeatedly has been suggested; but those who should have adopted it have been so busy "passing the buck" to the railroads that they have not had left any time, energy or initiative for the adoption of needed constructive measures.

In addition, the abuse of cars by coal shippers and consignees, which always has prevailed widely, has continued. Senator Pomerene of Ohio recently cited an example which he said came under his personal observation. This was the case of a coal dealer in Ohio who held loaded coal cars until they accumulated \$400 in demurrage, in order that he might increase by \$1600 his profit on the coal. The abuse of the reconsignment privilege has continued to be flagrant. And yet in the face of all such facts the Fuel Administration and the coal producers have the effrontery to continue to issue statements and make speeches charging the railroads with almost entire responsibility for the coal situation!

The line of argument adopted by Secretary Morrow in his letter which we publish elsewhere is typical of that which has been taken by the spokesmen of the National Coal Association and by the Fuel Administration. Mr. Morrow says: "The reports of the Federal Trade Commission and the United States Geological Survey show that the coal operators have furnished the nation with men and equipment at the mines to produce 700,000,000 tons of bituminous coal annually. The output this year will be some 540,000,000 tons. It is true that fires, floods, accidents, breakages and labor difficulties have caused the loss of some coal that might have been mined, but the official figures indicate that nearly 100,000,000 tons were not produced because of transportation difficulties."

Now, let us turn to the reports of the United States Geological Survey and find what they actually do show. They are compiled, it should be borne in mind, from reports made by the mine operators themselves. The weekly reports of the Geological Survey give the total amount of coal produced; the percentage which this production is of "full time output"; the percentage of failure to secure "full time output" due to "car shortage" and the percentages of failure to secure "full time output" due to "labor trouble and shortage," "mine disability," and all other causes. We have prepared a table based upon these reports of the Geological Survey for twenty-two consecutive weeks which is given herewith.

This table shows that in ten of these twenty-two weeks

a larger part of the failure to secure full time output was attributed to other causes than to transportation conditions. The mines reporting fell short of full time output during these twenty-two weeks by 60,500,000 tons; and the coal producers themselves attributed 52 per cent of this failure to transportation conditions, and 48 per cent of it to causes under the control of themselves, if of anybody!

"Under such conditions," Mr. Morrow concludes, "doesn't it seem rather futile and absurd to talk of the operators' failure to produce some millions of tons of coal? What could have been done with it, when the roads couldn't transport what actually was mined?" The answer is afforded by the statistics given in our table which demonstrate that at least 48 per cent of the failure to secure "full time output" has been due, according to the reports of the mine operators themselves, to their own failure to furnish coal for transportation when the railways were ready and able to move it.

One of the significant facts disclosed by our table is the tendency of coal production for some months after the government fixed coal prices. Secretary Baker's letter repudiating the agreement regarding prices made by Secretary Lane

TABLE I
Statement of Bituminous Coal Produced and Percentage of Full Time Capacity Output Lost Through Causes Within Control of Producers and Carriers Respectively. Weekly Figures, July 7 to November 24, Inclusive, 1917

Week ended	Tons produced	Per cent full time output produced	Full time output (100%)	Per cent full time output lost, all causes except car shortage	Tons lost, all causes, in control of producers	Tons lost from R. R. causes
July 7	2,466,000	77.4	3,200,000	12.6	403,200	320,000
14	3,049,000	76.5	4,000,000	8.5	351,000	600,000
21	3,140,000	74.4	4,200,000	9.0	362,800	697,200
28	5,844,000*	76.0	7,700,000	10.1	785,700	1,070,300
Aug. 4	5,322,000*	75.1	7,100,000	10.0	710,000	1,057,900
11	5,653,000*	73.8	7,660,000	13.5	957,580	1,049,420
18	6,141,000*	67.2	9,138,000	22.2	2,028,372	968,628
25	6,325,000*	74.2	8,524,000	15.5	1,321,028	877,972
Sept. 1	6,323,000*	77.1	8,201,000	12.6	1,033,297	844,703
8	5,744,000*	79.8	7,198,000	13.7	986,130	467,870
15	11,070,000*	78.0	14,192,000	12.2	1,731,184	1,390,816
22	10,377,978	71.9	14,460,000	18.7	2,704,000	1,359,240
29	10,916,113	74.3	14,700,000	14.9	2,190,000	1,587,000
Oct. 6	10,616,053	74.2	14,300,000	16.6	2,373,800	1,315,600
13	10,766,977	76.9	14,000,000	10.1	1,414,000	1,820,000
20	9,979,180	65.8	15,170,000	22.7	3,443,000	1,744,550
27	10,688,313	74.9	14,300,000	10.3	1,473,000	2,116,400
Nov. 3	10,802,841	75.4	14,320,000	10.1	1,446,000	2,076,400
10	11,116,356	77.8	14,290,000	6.9	986,000	2,187,370
17	11,325,202	75.3	15,000,000	5.3	795,000	2,910,000
24	11,232,922	74.2	15,140,000	5.6	847,840	3,058,280
Dec. 1	10,347,482	73.9	14,000,000	6.5	910,000	2,744,000
					29,252,931	32,263,649

*Carloads of coal multiplied by 58.

and the coal operators was made public on July 4. At that time the production of coal was running at the rate of 77.4 per cent of "full time output." The percentage of "full time output" being produced immediately began to decline and continued to do so for six weeks, until in the week ending August 18 it was only 67.2 per cent. Meantime the failure to secure "full time output" due to causes other than lack of transportation facilities increased from 12.6 per cent to over 22 per cent. The railways during this time could have handled millions of tons more coal than was produced. Again, in the week ending October 20 the output secured dropped to 65.8 per cent of "full time output," and the output lost due to causes in no way related to transportation conditions increased to almost 23 per cent. In this period, again, the railways could have hauled millions of tons more than were produced. If the mine operators at all times had been as well prepared to produce coal as they contend, by implication, that the railways should have been to transport it, the amount of coal produced and transported would have been many millions of tons greater than it has been.

Whether, under all the conditions, the mines could have produced and the railways could have transported enough coal to meet all demands is very questionable. The increase

in the demand has been very great; and it will continue to be so. The railways and the coal producers will not increase the output by continuing to "pass the buck" to each other; but they can increase it by co-operating in an effort to remove the various formidable obstacles to larger production which now exist.

THE WAR AND ENGINEERING STUDENTS

THE instructions issued by Provost Marshal General Crowder on last Saturday, deferring the calling of students in engineering colleges under the provisions of the draft and permitting them to enter the engineer enlisted reserve corps and to complete their education, will do much to remove a situation which was rapidly threatening to become serious to the government as well as to the railways and other agencies on which the government is dependent for service. Not only have large numbers of recent graduates left industrial work to enter various branches of military or naval service through voluntary enlistment or conscription but the present senior classes in the engineering colleges have been depleted to such an extent that only a fraction of the normal number of men will be graduated next spring. This same condition is already being reflected to an almost equal extent in the junior or 1919 class, and is also being felt in lower classes. A recent survey of the enrollment in about 60 of the leading engineering schools of this country showed a reduction of 45 per cent in the number of seniors and of 30 per cent in juniors as compared with a year ago. Within the last few weeks there has been a further and particularly heavy exodus of members of these classes, while the calling of additional men under the provisions of the selective draft would have again reduced the number remaining in the colleges. Even excluding the further draft, the number of graduates available for the government and for the industries of the country next spring will only be a small proportion of the normal number and the same condition may be expected in 1919. This is occurring at a time when the demand for engineers is greater than ever before.

Becoming alarmed at the results which would inevitably follow a continuance of this tendency, several of the leading national engineering societies called this condition to the attention of the government a few days ago with the result indicated above. In harmony with the spirit of the selective draft law to place every man where he will be of the most value to the country, similar action had already been taken by the government, with reference to dental and medical students, the basis for action in these cases being that these men are more valuable to the country in their professional capacities after completing their education than they would be as privates in the ranks if taken before the completion of their college courses.

This same argument applies to engineers. In no previous war have engineers played as important a part. They are being employed in professional capacities in larger numbers than in any previous conflict. The same tendency is present in the industries working on government business, while the unusual demands now being made upon the railways and other industries are further increasing the need for men with engineering training. It is evident that both during the continuance of the present conflict and in the period of reconstruction which must necessarily follow the conclusion of the war, engineers will be greatly in demand. With the heavy wastage which must inevitably occur in Europe and with the shutting off of the supply of engineers from the colleges, this country was threatening to deprive itself of the services of a class of men which it will sorely need.

The railways have suffered acutely from the shortage of engineers during the past year. On a number of roads contractors have been delayed and work held up pending the completion of plans and the staking out of the projects. On

many roads supervision of improvement work has been greatly curtailed with all the detrimental results which necessarily follow. Conditions have been aggravated during the last few weeks by the enlistment of registered men who wished to get into various branches of the service now closed to them. As a result the engineering department on many roads and particularly in the valuation work has been threatened with serious disorganization. While the action of Provost Marshal General Crowder will have only partial effect this year, the precedent thus established will tend to conserve the engineering resources of the country and will make available for the railways and for other industries, as well as for the government itself, the services of a class of men seriously needed.

NEW BOOKS

Proceedings of the American Society for Testing Materials. Edited by Edgar Marburg, secretary-treasurer, University of Pennsylvania, Philadelphia, Pa. Two volumes. Illustrated, 6 in. by 9 in. Part 1, 875 pages, Part 2, 675 pages. Bound in paper, cloth and half leather. Published by the Society, Philadelphia, Pa. Price per volume, paper \$5, cloth \$5.50, half leather \$6.

These two volumes contain the proceedings of the twentieth annual meeting which was held at Atlantic City, N. J., June 26-29, 1917. In Part 1, 451 pages are devoted to the reports of committees and to the discussion of these reports. The next 305 pages contain the tentative standards of the Society for a wide variety of materials used in engineering work. Part 2 contains the technical papers, 29 in number, which were presented at this meeting and the discussion of them.

The proceedings of this Society are unusually well bound and printed and contain a large amount of authentic information regarding materials used by the railways and other industries.

Encyclopedia of Latin America. Edited by Marrion Wilcox and George Edwin Rines. Size 7 in. x 10 in. 887 pages, illustrated and with maps. Bound in buckram. Published by the Encyclopedia Americana Corporation, 27 William street, New York. Price \$10.

In this book the editors, assisted by a number of other authorities and members of the Encyclopedia of Americana staff, have gathered together seemingly nearly all of the important and interesting information concerning the countries of Latin America.

In the first place the fact that the Latin American countries have so many characteristics in common has enabled them to devote 160 pages to the general characteristics of the Central and South American nations, under such heads as the Latin-American Civilization, Education, Labor, Property Rights, Commercial Regulations, Industrial and Commercial Expansion, etc., including also 32 well-written pages by Otto Wilson, chief of the Latin American division of the Bureau of Foreign and Domestic Commerce on railway and other transportation. The major part of the book, namely, over 500 pages, is devoted to the various Latin American countries in detail. To take one example, the articles on Argentina which cover over 70 pages go into detail concerning its physiography, its population, its history, its government and its salient industrial and commercial characteristics, this including 3 pages which enlarge upon the general article on transportation mentioned above. There is also another important section of the book which deals with the leading industries of the Latin American countries and contains special information relative to the commerce of these industries in general and in detail. To take one or two examples, the section on cattle and meat, classified by countries, covers 20 pages, that on tobacco 13 pages, etc. The book is of special interest and value to any person interested in South and Central America, or to any one having to do in any way with the commerce and trade with the nations to which it relates.

Letters to the Editor

MR. WARFIELD REPLIES TO AN EDITORIAL

BALTIMORE, Md.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In the issue of your paper of November 23 there was an editorial of apparent slight to Samuel Untermeyer, myself, or both. In your criticism of remarks made by me before the convention of the Investment Bankers' Association recently held in Baltimore your editorial attributes to Mr. Untermeyer the authorship of one of the legal opinions quoted by me in reference to the unconstitutionality of federal incorporation of the railroads without the unanimous vote of all of the stockholders of the railroads. As a matter of fact I never consulted Mr. Untermeyer on this subject, nor have I seen directly or indirectly any opinion from that gentleman in this matter, or even an expression of opinion by him. So far as I know Mr. Untermeyer had no knowledge whatsoever that I proposed making the address in question, nor did he know my views on the subject.

Therefore, your statement was a gratuitous misrepresentation of the facts, all of which you could have ascertained had you taken the trouble to do so. The legal opinions from which I quoted had been obtained by sources for their own purposes, and when it was heard that I intended taking the position I did in the address mentioned they were voluntarily sent to me. However, I was requested not to disclose the names of the lawyers giving such opinions. But let me say that I would consider any legal opinion given by Mr. Untermeyer on any subject as having great weight, for I entertain a high opinion of the legal ability of that gentleman.

S. DAVIES WARFIELD.

President National Association
of Owners of Railroad Securities.

[The *Railway Age Gazette* did not say that Mr. Untermeyer had given Mr. Warfield one of the opinions referred to. It merely said an eminent lawyer holding his views might give such an opinion. It did not intend "slight" to either Mr. Untermeyer or Mr. Warfield. It has high regard for both of them. But it always has been possible for us to respect men and at the same time dissent from the views expressed by them.—EDITOR.]

THE COAL SITUATION—A NATIONAL MENACE

WASHINGTON, D. C.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In your edition of November 30 you published an editorial entitled "The Coal Situation—A National Menace," which merits a word in reply. The editorial is an attack on the Fuel Administration, the coal producers of the United States and on the National Coal Association. We feel certain that your sense of fairness would hardly have let you make some of the categorical charges you do make had you first informed yourself of the true conditions. Kindly permit us to call your attention to a few facts that we think should have been before you.

In the first place you say that we have attacked the railroads. Not at all. The nation finds itself short of coal in time of war. Official records show that the lack of railroad cars is the principal cause of the shortage. We have merely called attention publicly to this condition. We are convinced that this is the quickest way to remedy the shortage, and that, knowing the facts, the people will insist that effective measures be taken immediately to relieve an intolerable situation.

In reciting the facts we have carefully avoided "attacking" the railroads. In our statement of November 28, to which

you have referred, we said that the "National Coal Association recognizes that the railroads are congested and crowded with freight far beyond anything ever before experienced by them. * * * Only orders establishing the preferential movement of coal by the railroads, issued at once, can correct the situation. The public must recognize that such orders are for its benefit, and, therefore, must support the railroads in carrying them out."

In our statement of November 23 relating to the New England situation, we said: "The National Coal Association realizes the plight of the railroads under the enormous burden they have been called upon to bear and is co-operating sympathetically with railway officials in an effort to find a solution to their troubles so far as the movement of fuel is concerned."

In our statement of November 19 stating that bituminous coal production had been reduced approximately 2,000,000 tons during the preceding week by car shortage and congestion, we said: "Curtailed production is due almost wholly to the inability of the railroads in their present congested condition to supply the mines with an adequate number of cars for loading. The National Coal Association is endeavoring to co-operate with railway officials, the Fuel Administration and the Priorities Committee in finding a remedy for the situation."

In announcing the appointment of our traffic manager, November 13, we said: "The task of co-operating with the railroads to provide sufficient cars for the loading of 500,000,000 tons of bituminous coal annually has been delegated by the National Coal Association to John Callahan," * * * and "In carrying out this work Mr. Callahan will endeavor to assist the various governmental agencies involved, and the railroad companies in meeting the transportation demands of the coal industry."

It is the intention of the National Coal Association to continue to state facts of interest to the public in connection with coal supply and reduction from time to time. It is also our intention to continue to the utmost the work we have already begun of co-operating with the railroads in meeting transportation problems relating to fuel.

You charge the National Coal Association with being founded to "produce misinformation." You appear to have based this verdict on the circumstance that the Association stated that the loss of coal production on account of transportation deficiencies in the week ending November 17 was 2,000,000 tons. We admit that our statement was based on incomplete reports, but the conservatism of our estimate is clearly shown by the announcement of the United States Geological Survey that the correct figure was over 2,800,000 tons.

We have been equally conservative in other statements. Hence we have uniformly been more than fair to the railroads whenever we have had to speak of them in connection with the coal shortage. Moreover, if we influenced the Fuel Administrator to ask for priority and preference for coal shipments, it was only because the facts we presented clearly indicated the need of just such action. Since the chairman of the Priorities Committee has made an ineffectual attempt to grant such a preference, we wonder if even you may not have at least a suspicion that the National Coal Association has been giving out facts instead of "misinformation."

You accuse the coal operators of "want of diplomacy and capacity in dealing with their labor," etc. What of the railroads? We wonder if you have forgotten in so short a time the Adamson Law and the events that led up to its passage.

You attempt to lay upon the coal operators the blame for the coal shortage. Here again we wish to refer you to the official records which are open to the public. The reports of the Federal Trade Commission and the United States Geological Survey indicate that the coal operators have furnished the nation with men and equipment at the mines to produce 700,000,000 tons of bituminous coal annually. The

output this year will be some 540,000,000 tons. It is true that fires, floods, accidents, breakages and labor difficulties have caused the loss of some coal that might have been mined, but the official figures indicate that very nearly 100,000,000 tons were not produced because of transportation deficiencies. Under such conditions doesn't it seem rather futile and absurd to talk of the operators' "failure to produce some millions of tons of coal"? What could have been done with it, when the roads couldn't transport what actually was mined?

NATIONAL COAL ASSOCIATION,
J. D. A. MORROW, *General Secretary*.

MR. KRUTTSCHNITT ON THE RATE OF DEPRECIATION

WASHINGTON, D. C.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

On page 1037 of your number of December 7, the following paragraph appears, in an article on "Depreciation" written by Mr. G. C. Hand:

"Presuming the average life of ties to be 10 years, for example, the combined life remaining unexpired in each series of that number will, upon the lapse of a few years, be the quotient of 9 plus 1, or of 10 plus 0, divided by 2; and depreciation will amount to 50 per cent of cost, less the value of scrap material recovered. The salvage of ties is a negative quantity."

The theory implied in the above, as we understand it, is that of the Division of Valuation of the Interstate Commerce Commission, is erroneous, and would result, if not refuted, in unjustly depriving shareholders of \$552,795,200 of capital invested in the railroads of the United States, being half the estimated present reproduction cost of the ties in 394,944 miles of tracks of all kinds. The error lies in confusing the maximum life of a single tie with the average life of a number of ties, and in ignoring the effect of replacements. If one tie has a maximum life of ten years—not an average life, as one tie cannot have an average life—the average life in an aggregation of such ties, of various ages, ranging from ten to zero, as assumed in the example, is 10 plus 0 or 9 plus 1, divided by 2, or 5; but if the average life of an aggregation of ties is ten years, the lives of the individual ties will range from zero to perhaps as much as 20 years, because the meaning of average implies various lengths of life bound together by the law that the sum of the lives of all individuals divided by the number shall equal ten. A picture of the life-expectancies of a group of ten ties will resemble this series:

Life Expectancy											19½ years
¼	3	5	7	9	11	13	15	17			
Condition per cent of each tie in terms of <i>Average Life</i> —10 years—thus:											
5	30	50	70	90	110	130	150	170	195	per cent of ten.	Aggregate = 1000
Average condition per cent of group:											
$\frac{1000}{10} = 100 \text{ per cent of 10, or 10 years}$											
Condition per cent of each tie in terms of <i>Maximum Life</i> —20 years—thus:											
2.5	15	25	35	45	55	65	75	85	97.5	per cent of 20.	Aggregate = 500
Average condition per cent of group:											
$\frac{500}{10} = 50 \text{ per cent of 20, or 10 years}$											

In other words, we reach the conclusion that 100 per cent of 10 is equal to 50 per cent of 20, as it should be. The paragraph quoted should therefore read:

"Presuming the average life of ties to be ten years, for example, the combined life remaining unexpired in each series of that number will, upon the lapse of a few years, be the quotient of 19 plus 1, or 20 plus 0 divided by 2, and depreciation will be zero."

In other words, the average life of a number of ties of various ages can be ten, only if the lives of individual ties range from 0 to 20, and the lives can range from 0 to 20 only if

ties are currently renewed as their lives end, for otherwise the ages of all would be the same. The answers to the following two questions should make the matter clear:

Question 1. What kind of ties are used in construction and repairs by the ——— R. R.? Answer: Ties whose lives range from zero to as much as 20 years, but which under our traffic and climatic conditions will last on the average 10 years.

Question 2. What kind of ties will be found in the track of the ——— R. R., which makes renewals currently as the necessity therefor becomes apparent? Answer: Ties whose lives range from zero to 20 years, but which under our traffic and climatic conditions last on the average 10 years.

As the answers are identical, the average life of ties as found at any time in a properly maintained track is the average life of the class of ties used.

J. KRUTTSCHNITT,
Chairman Southern Pacific Company.

PERISHABLE TERMINALS

WASHINGTON, D. C.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Time was when demurrage officers asked the question, "What is the test of a car shortage—the shipper's demands or the market's needs?" In so far as concerns the perishable products of the country it is neither the one nor the other. Perishables must move to market when they are ready to harvest. Not always is the market prepared to absorb them on arrival. They must be stored pending the readiness of the market to absorb them; else there will be financial loss to the producer, and possibly waste of foodstuffs.

Cars are not the places where they should be stored. But they will have to continue to be stored in cars until other storage space is available. It has for some time been evident to close students of the problems of intra-city distribution of foodstuffs that other storage space ought to be provided in each city in connection with joint wholesale perishable terminals to which all the rail carriers serving a given city shall have access on equal terms. The leading part which the railroads are called upon to take in bringing about conditions of this kind is to merge their competitive activities with respect to terminal delivery, and to agree to use a common neutral terminal.

Until that point is reached in the provisioning of our large cities, little headway will be made in securing by moral suasion the co-operation of shippers and receivers in the more efficient use of cars by releasing them promptly at terminal markets. A perishable terminal equipped with ample storage space, common and cold, will permit cars to be unloaded as soon as they reach the market, and to be returned to points of production.

It is idle to assert that present conditions will disappear with the close of the war. The war has merely accentuated and made very general difficulties hitherto sporadic, but for some time clearly on the increase. It has brought suddenly to the attention of the entire country the urgent need of changing some of our transportation and marketing practices to conform to changed economic conditions.

Transportation men seek higher demurrage rates to force the release of cars, but proper distinction is not made between perishable and nonperishable commodities. The arguments against increased demurrage charges by shippers of nonperishable commodities have not been very convincing, nor, in the long run, would any demurrage charge, however drastic, be a serious handicap to nonperishable traffic.

Perishable commodities, on the other hand, especially those moving under refrigeration, present a case quite different, especially in view of the necessity for their concen-

tration at one central point for the purpose of wholesale marketing. Instances are not wanting of concessions in the matter of free time and use of cars granted in the past by individual railroads in an effort to monopolize the perishable traffic of certain cities. Criticism now of practices not then improper is neither in order nor helpful. Doubtless, had transportation officials then been able to foresee the results now of their concessions, the present problem would be different and less difficult.

It does not appear that present demurrage rates, considering the country as a whole, are a handicap to perishable commerce. Nor do they force the release of refrigerator cars. To impose a rate that in all cases would force the immediate release of cars without providing other storage space would be uneconomic.

The United States Department of Agriculture has cooperated with the Commission on Car Service the past year by continually urging receivers of perishable commodities to unload and release cars promptly. As cold weather approached, shippers in the West pleaded for refrigerator cars to save apples and potatoes from freezing. The railroads, unable to fill orders for cars, at the same time begged the department to use its influence to secure the release of thousands of cars held in eastern markets under load. Slow progress was made, and the department's marketing experts at that particular time could detect no indication that receivers were holding cars under load for the purpose of manipulating prices.

The markets simply were saturated and lacking in temporary storage space. To have forced the accumulated products on the market would have meant loss to producers and distributors and waste of foodstuffs.

The department, through the columns of the *Railway Age Gazette*, desires to present this problem to the transportation officers of the entire country and to solicit their co-operation in making an early beginning of its solution.

G. C. WHITE,

Specialist in Charge of Transportation, Bureau of Markets,
U. S. Department of Agriculture.

A REPRESENTATIVE COMMISSION

NEW ALBANY, Ind.

EDITOR OF THE RAILWAY AGE GAZETTE:

In view of the recent utterances of Frank A. Vanderlip relative to the need of a reorganization of the present methods of controlling transportation companies and the national interest which his remarks have apparently occasioned, I am sending you herewith a copy of a letter, which, with one or two minor changes and additions, is the same as one mailed you early this year, and which you published under Letters to the Editor in the issue of March 2, 1917.

In that letter I suggested that the President should appoint to the Interstate Commerce Commission one representative of the people from each of five districts, and that the transportation companies should select another representative from each district, the 10 members thus chosen to select a chairman, all to be subject to confirmation by the Senate. It was also suggested that the powers of this body should be almost plenary over all common carriers of any kind that originate freight or passenger traffic in interstate business, whether they operate wholly or partly in any one state, and that their decisions should be subject only to adverse decisions of the Supreme Court. In order to eliminate the confusion and injustice that now exist on account of the acts of various state and civic bodies, they should be eliminated or made entirely within the jurisdiction of the interstate body. But, in order that each state may have its individual needs taken care of, the governor of each state should appoint a representative of his state before the interstate body, such appointment being subjected to ratification

by the governing or legislative body of that state, and such appointees forming, perhaps, a lower body of the interstate body.

Referring to Mr. Vanderlip's statement, he says in part, "Upon the central board I would put representatives of the government, members of the Interstate Commerce Commission, representatives of labor, and representatives of the public, the investor." The representation of labor on such a board is an excellent idea, but would it be fair not to include representation of the transportation companies themselves; since, as the Chicago Tribune points out, the public, or investor, as used in Mr. Vanderlip's suggestion includes the direct and indirect interest of half of the nation; and therefore could not be easily considered as having direct reference to the incorporated bodies actually operating transportation facilities. Such corporations would naturally have more knowledge of their needs and requirements than any one not directly interested.

And may I ask, why it appears necessary to distinguish between the government, which is the servant of the public, and the public; or between the government and the Interstate Commerce Commission, which is apparently a part of the government?

And does it not appear that the addition of another governing body would prove superfluous and burdensome, and that it would be better to accomplish the desired end by simplifying instead of adding to the methods now used to attain that end?

Would you not, therefore, consider that the solution of the problem lies somewhere between the plan suggested by Mr. Vanderlip and the plan outlined in the letter above referred to?

C. E. NEWELL.

THE UPPER BERTH PROBLEM

SAN FRANCISCO, Cal.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

May I say a word for the Pullman Company in connection with the letter reproduced on page 679 of your issue of October 19, 1917? I, too, have been traveling in Pullman cars for a great many years, and therefore am quite familiar with the accommodations provided in upper and lower berths and compartments and drawing rooms. As I see it, the Pullman Company is improving its accommodations for the traveling public, the same as railway equipment, motor cars, building operations, and all other things in this human existence improve as time goes by. If this is a fact, then "a Pullman friend" surely must have noticed that in all late pattern Pullman cars a small electric light partly concealed is provided at both ends of the aisles in open cars, but in such way that passengers will not be annoyed by these lights after they retire.

Another point is the fact that the Pullman Company undoubtedly has issued instructions to its conductors and porters regarding the switching off of lights after specified hours. Of course, it is very difficult to satisfy all passengers who travel in Pullman cars, since many of them wish to retire early, while others desire to remain up more than half the night. In view of this I think most observing travelers will admit that the Pullman Company and its representatives do everything they possibly can to satisfy the greatest number of passengers.

It seems to me that the fact that upper berths are now sold for less than is charged for lower berths is a clear indication that they are not regarded as desirable as the lower berths, although we all admit that the beds of the upper berths are more comfortable than in the lower berths when once you get undressed and under the covers.

G. H. CORSE, JR.

Foreign Passenger Agent, Union Pacific System.

The British Railways Under Government Control

Many of the Railway Problems Great Britain Has Solved
Were Like Those We Are Now Trying to Solve

By F. A. McKenzie

THE following account of the operation of the British railways under the control of the government during war times is especially interesting at this time when President Wilson has recommended a similar policy for the operation of the railways of the United States:

British railways have played a great and splendid part in the war. Working with depleted staffs under war conditions, they have enabled England to move millions of men and millions of tons of munitions with the utmost rapidity and with an entire absence of confusion. They have met to the full every demand. They have sent their trained workers to the colors by the many score of thousands. They have torn up their lines and given their locomotives and rolling stock for the service of the army in France. Sinking ancient rivalries, they have come together, working as one for the common good. The government took control of the lines when hostilities began, but government control merely provided the agency through which the railway men themselves rallied to employ their resources as an effective instrument of war.

COMMERCIAL VS. WAR RAILROADS

The British and German railway organizations before the war presented a striking contrast. German railways were almost wholly state owned. Many of them were built primarily for purposes not of commerce, but of strategy.

The British railways were privately owned and were built solely for commercial purposes. The control of the principal lines was divided among forty companies. These maintained only a minimum of co-operation among themselves, and wherever they ran through the same territory there was keen rivalry. British lines were laid, the size of railway carriages and goods trucks decided and the staffs selected solely for the ordinary work of peace time.

One thing, however, had been done, a thing that was to prove of vital importance when war broke out. In 1871, following the Franco-Prussian conflict, the British government took power by act of Parliament to acquire by royal proclamation any or all of the railways of the United Kingdom in time of war. A committee of railway managers was already in existence to deal with such a situation. This body, known first as the War Railway Council and afterward as the Railway Executive Committee, was to act as a central organization, to give instructions and to co-ordinate the activities of the different railways in war time. Working in co-operation with it was the Engineer and Railway Staff Corps—a volunteer organization of railway workers whose purpose was to develop schemes, methods and personnel for the War Railway Service. It was composed of general managers of the leading railways, leading contractors, engineers and other railway men.

Month by month and year by year the Staff Corps worked out schemes for the utilization of our lines under any contingency. It planned how to carry out great movements of troops from one part to the other. Few, if any, then contemplated more than handling bodies of men running into a total figure of from four to five hundred thousand. When, later, the needs of the war raised the total to ten times the old maximum the plans proved to have been so soundly laid that the greater demands were easily met.

THE MEANING OF GOVERNMENT CONTROL

The Railway Executive Committee and the Railway Staff Corps, working in conjunction with the Director General of

Military Transport, gradually completed, during the years preceding the war, their plans of operation. These covered more especially the movements of a British expeditionary force to its embarkation port, the quick concentration of men at any point to repel an invading army, and the evacuation of invaded districts. By 1912 all was in readiness. Every railway manager had in his safe a confidential, sealed, unopened document, detailing a scheme of mobilization. In it he was told exactly what to do, the trains to be moved, their starting points and destinations, and the entire schedule of running, if war came. So far as the operation of our railways was concerned England was prepared.

On the same day that war was declared (August 4, 1914) the railways of England, Wales and Scotland—not Ireland—were taken over by the government. The managers opened their sealed instructions and proceeded to carry them out. It had been provided in the act of 1871 that full compensation should be paid to the owners for any loss incurred. The government, however, did not at the beginning announce any terms with the companies. This was left for a later date. Government control, it is important to note, did not mean government ownership. The lines remained the property of the companies. They retained the management of their own concerns, subject to the instructions of the executive committee, and the whole machinery of administration went on as before. The sole purpose at the beginning was to facilitate the movements of troops. But as the war developed, as economy became more and more essential, the scope of the Railway Executive Committee, now in supreme control, became greatly extended.

The official chairman of the Railway Executive Committee was the President of the Board of Trade, but the real presiding chief was the acting chairman. Working in co-operation with the acting chairman were 12 general managers of leading British lines. Under the central body were groups of committees, each made up of railway experts. The War Office and the Director General of Transport were in touch with the Central Committee. There was a constant interchange of ideas, but from the beginning there was no attempt to supersede the railway men in carrying out their work.

The main plans of the war policy of the railways had, of course, to be approved by the government, and announcements were made in the name of the President of the Board of Trade. But the plan uniformly adopted was for the authorities to tell the Railway Executive Committee what had to be done and then to leave it to plan the details of how the work should be completed. In other words, the experts were allowed to carry out their own work in their own way, so far as was possible, under war time conditions. And they got the thing done.

SEVENTY-THREE TRAINS IN FOURTEEN HOURS

The first task before the committee was one calculated to tax its resources to the full. The Territorials—the volunteer forces of the United Kingdom—had been called to the colors and had to be distributed to their training grounds and their defence areas all over the country. Simultaneously the Expeditionary Force, numbering 120,000 men, with a vast amount of material of war, had to be transported in a minimum of time to Southampton—the port of embarkation for France.

The government gave the railways a time limit of 60 hours to make ready for despatch to Southampton 350 trains of

about 30 vehicles each. In addition, close on 1,200 other trains were necessary for conveying the equipment, munitions and food supplies of the forces. There were about 60,000 horses to be carried—seven to a truck; there were 5,000 tons of baggage and 6,000 vehicles. Sir Herbert Walker, over whose system—the London & Southwestern Railway—the trains had to travel to Southampton, described what was done in a speech shortly afterward at the American Luncheon Club in London. He told of the government time limit of 60 hours:

We "delivered the goods," as you Americans would say, in 48 hours. At Southampton, for practically every day of the first three weeks of the war, we handled during a period of 14 hours no fewer than 73 of these trains, including the running of them to the boat side and the unloading of the full equipment of guns, ammunition and horses.

The trains arrived at intervals averaging 12 minutes. It was a matter of special pride to all the railway men concerned—and we general managers give credit for the feat to the efficiency of our disciplined staffs—that practically every train without exception came in on scheduled time. Some of them came from remote parts of the kingdom—Wales and the north of Scotland.

Among the audience on that occasion was Mr. (afterward Lieutenant Colonel) H. W. Thornton, general manager of the Great Eastern Railway, a distinguished American railway organizer, who had come to England from the United States. He said that so far as his knowledge of great transportation achievements went there was no event in railway history to compare with what the British lines had accomplished in that month of August, 1914. Certainly in America, the land of "big stunts," there had never been anything like it. It may be added that this rapid transportation of the troops to Southampton was only possible because the docks there had been carefully planned by the railway company for the handling of large masses of men and quantities of material. The trains conveying the troops and freight were run right down to one of the berthing stations; they were emptied there with the greatest expedition and at once sent back. Each train had a permanently displayed index number on it, by which it was known throughout its journeys; its exact time of arrival and departure at each place was scheduled, and the schedule had to be kept.

Under the terms on which the railways were taken over for the period of the war the government guaranteed to the proprietors of the railways that their net revenue should be the same as in 1913, except when the net receipts for the first half of 1914 were less than the first half of 1913; in that case the sum payable was to be reduced in the same proportion. The entire government traffic—men and freight—was to be carried without any direct charge being made for it or any accounts rendered. This plan was considered satisfactory by both sides. In the majority of cases there had been a reduction of earnings in the first half of 1914 over the previous half year, and companies were contemplating a still further reduction. The interests of their shareholders being assured, they were able to devote themselves to the work of economical and efficient distribution, quite apart from the usual financial problems. The one weak side of this agreement was that it made no allowance to cover increased interest payments on account of new investments and new capital expenditure since the war began. This point was afterward met by an arrangement that the government should pay interest at 4 per cent. on all new capital invested by the railways since August 4, 1914, on new lines, branches, terminals, equipment or other facilities put into use since January 1, 1913.

The conclusion of the financial agreement between the government and the companies automatically brought about a great economy in the system of railway accounts. Hundreds of clerks had been employed at the Railway Clearing House

at Euston, London, in dissecting payments covering different lines, so that each line should have its proper share. This work was no longer required. The vast amount of competition maintained before the war for traffic at once ceased. British railways, particularly those competing with others for the business of particular towns, had maintained staffs of canvassers not only for freight but even for passenger traffic. All the great companies had extensive publicity departments, which by posters, pamphlets and newspaper articles sought to bring home to people generally the attractions of their lines. In the years before the war this publicity had tended to grow more and more elaborate and more and more costly. Now it was swept away at a stroke. The weekly traffic returns of the different lines were no longer required and so ceased to be published.

The reports of the companies were cut down to a bare minimum, and in many cases even these reduced reports were not sent to the shareholders unless they specially asked for them. The tickets issued by various companies for the same points were made for a time available by the trains of any railway running between the points to which the tickets were issued. This concession was shortly afterward withdrawn.

The great strain of the despatch of the first expeditionary force passed, but it soon became clear that the railways would be faced by a double problem. They would all the time have a vast amount of military traffic to handle—the transference of troops, the carriage of munitions, the assembling of different sections of war material. Simultaneously with this great increase of work, they had a very serious reduction of staff. A number of railway men had been called up at once as army reservists and territorials, while many others volunteered to join the colors. It was estimated a few months after the outbreak of war that 66,000 men, out of a total of 643,135, had joined the army. This figure rapidly grew, until at the end of 1916 nearly 150,000 men had been released by the railways for war duty—close on to 50 per cent. of the men of military age. This shortage of labor quickly grew into one of the most serious issues. The companies had no desire to keep back recruits from the army, but they realized that it was essential for the welfare of the nation that the railways should be maintained in an efficient manner and be prepared to meet any military demands which might be placed on them. The King, in a message to the skilled workers in the shipbuilding and armament firms, emphasized this latter point in words that applied equally to railway workers: "His Majesty greatly admires that spirit of patriotism which arouses in them (the skilled workmen) the desire to enlist and fight at the front, but His Majesty wishes to remind them that by work that they alone can most successfully carry out they are assisting in the prosecution of the war equally with their comrades serving by land or sea."

At the time of the outbreak of war the railway companies and the men's unions—the National Union of Railwaymen and the Associated Society of Locomotive Engineers and Firemen—were engaged in a controversy on the question of wages. A railway conciliation scheme drafted by a Royal Commission had come into operation early in 1912. This was to continue until November 6, 1914, but either side could terminate it on or after that date by twelve months' notice. The men had given notice in November, 1913, to withdraw; they wanted the conditions revised. When war broke out the negotiations between both sides were in a very forward state. A temporary arrangement was arrived at in October, 1914, by which the conciliation scheme was to be continued, but to be terminable by either side at six weeks' notice. Many railway employees were convinced that since the government was now virtually in control of their lines their demands for increased wages should be met. The rapid rise in the cost of living had made it obvious, after a time, that something must be done. The railway companies felt that, from their point of view, any rise in wages, even though wholly or mainly

made by the government, might have the serious result of putting on them a heavy burden to be borne after the war and after private ownership was resumed. It is always difficult to reduce wages, whatever the conditions may have been under which they are raised.

On February 13, 1915, terms of settlement were arranged. A weekly bonus was to be paid to all wage-earning employees of eighteen years old and upward engaged in the manipulation of traffic; all whose standard rate of wages was under 30s. a week were to receive a weekly bonus of 3s., and those earning 30s. or more were to be paid 2s. The cost of this bonus was divided, one-quarter being paid by the companies and three-quarters by the government. Modifications of the original agreement between the government and the railway companies were made in order that this might be done. This agreement was revised afterward in 1915, and in its final form all employees of 18 years or upward were given a bonus of 5s. per week, those under 18 of 2s. 6d. The understanding at the time was that this arrangement was finally to settle the wage question until the end of the war. A definite undertaking was given on that point by the men's organizations: the National Union of Railway Men and the Associated Society of Locomotive Engineers and Firemen undertake that during the pendency of this agreement they will not present to the railway companies any fresh demands for increased bonus or wages, or general alterations in conditions of service, and that they will not give countenance or support either to a demand on the part of any of their members to reopen the settlement now made or any strike that might be entered upon in furtherance of such demand.

FURTHER WAGE INCREASES MADE

Here, however, war conditions proved a stronger factor than formal agreements. The cost of living generally, and particularly the cost of food, continued to mount up. A second war bonus of 5 shillings was added to the first, coming into force in September, 1916, and in April, 1917, a further agreement was come to between the Railway Executive Committee and the various trade unions of the men by which the war bonus was increased to 15 shillings per week for all employees over 18 and 7 shillings 6 pence per week for those below that age. It was estimated that the total additional expenditure on account of the war bonus would be £23,000,000. The whole of these latter increases were borne by the government.

These rapid rises in the wages paid to the men came in for much criticism. It was pointed out that the increase of 1916 was nearly equal to wiping out the dividends on the ordinary stock. The Railway Magazine declared: "Under no other system but state control would a war bonus be paid on an all-around basis alike to lads of 18 years of age and the oldest employee, and single and married men placed on the same plane, no matter what may be their financial responsibilities or comparative wages." But here certain considerations have to be borne in mind. This rise in wages was not peculiar to the railways, but was general in industry. The railway men under the war labor regulations were not to leave their employment for other work. It was felt that they could not reasonably be expected to continue under far lower wages than other men in allied industries in the same districts. Above all, there was the outstanding fact that the old scale of wages was inadequate under war prices. The average cost of food of the kind mainly purchased by working men had doubled; clothing was much dearer; all the incidental expenses of living, except rent and rates had gone up; and men could not maintain their families decently on the old wage scale. The idea of making the rise the same for all ranks was to benefit most those who needed it most—the lowest paid men.

No statements have been issued showing the final balance sheet of the railways under government administration, and any such statement would be very difficult to make out, since

a vast quantity of government traffic not credited under the war arrangements would have to be charged up in attempting to make any fair balance sheet.

In December, 1916, Mr. Bonar Law, speaking officially in the House of Commons, said that the government agreement with the railway companies, notwithstanding the grant of the war bonus to railway employees, had "involved no financial loss, but probably some gain." When we contrast the working of the railways under government supervision with the working of the British shipping independently, the gains of the government control become evident. The railways under government direction kept freights even, directed their operations on an organized plan, gave undue profits to no man, and were worked for the sole purpose of benefiting the country. The merchant shipping trade, left largely under private control, was used in many directions for the accumulation of individual fortunes—fortunes earned out of the necessities of the community.

The era of economy in administration extended. At first the railway companies, believing that the war would possibly be short, attempted to carry on as usual, to maintain as many of their ordinary services as they could, and to give the public all the facilities to which they had been accustomed in days of peace. After a time it became evident that this course was impossible. Step by step restrictions came in force. Restaurant and sleeping car services were cut down or suspended altogether. Excursion and week-end tickets, formerly a very prominent feature in British railways, ceased. The service of passenger trains was reduced. Minor stations were closed and some branch lines were abandoned. The "luggage in advance" system, by which passengers could send their luggage on a small payment before they themselves left and have it delivered by the railway company to their destination, was ended, and passengers were asked to take as little baggage as possible. Later on passenger baggage was definitely limited to 100 lb. per head.

FURTHER BENEFITS OF THE "POOL"

Among the most important economies in handling traffic was, first, the establishment of the common user of railway companies' open goods wagons. Under the old system the wagon received loaded by one company from another had to be promptly returned to the owning line, even though there was no freight for it on its return. Under the common user arrangement it became available for loading in any direction, thus reducing the haulage of empty vehicles to a minimum. This system of pooling luggage cars came into force on January 2, 1917. The pool did not include the very large number of privately owned wagons, estimated from 600,000 to 700,000, which are a distinct feature of British railways; but the benefits of the pool were soon seen to be so real that steps were pushed forward to take over the control of the private wagons also.

A minor economy introduced early in the war was an agreement by the railways to accept each other's "paid" and "to pay" stamps and labels on parcel traffic. This saved very much labor, and it led to a further development in January, 1917, when the Railway Executive Committee announced that from a given date "the carriage charges for all descriptions of traffic for conveyance by passenger train or other similar service must be paid by the sender at the forwarding station." The whole system of bills and accounts for passenger goods traffic was swept away. Some reformers even proposed that the railways should go further and insist upon the prepayment of all small traffic by goods trains. Still another step was a decision that claimants for the loss or damage of goods traffic should be dealt with by the company on which the claim was made without any division, such as had formerly taken place, of the amount paid between the companies concerned in the route over which the traffic had been conveyed.

The saving in printed matter was so extensive that at least one large company was able to turn out many tons of paper which had been stored for office use, and to put this on the market at a time when paper was scarcest.

In January, 1917, in addition to the changes already described, passenger rates were raised 50 per cent., and Irish railways, which had formerly been outside the government control, were taken into it. The rise in passenger rates was instituted not to increase revenue, but to reduce the amount of traveling. The British authorities openly appealed to the people not to travel except when necessary. It was urged on the public in every way possible that pleasure traveling under existing conditions was unpatriotic. The railway men were wanted for other work.

TRANSPORTING STOCK TO THE WAR ZONE

Late in 1916 a fresh consideration came to the fore. In the early stages of the war the British had relied mainly for the transport of their goods in France on the service of large numbers of powerful motor wagons. Experience proved that while a motor service might answer as a temporary measure for a comparatively small body of men, it was impossible to provide for very large armies by road traffic. It was particularly impossible to bring forward with sufficient rapidity the enormous quantities of shells required and the numerous heavy guns without the use of properly built railroads. The companies could not well manufacture afresh the rails, locomotives and rolling stock necessary, or educate outside men to operate them in France. To meet this situation large sections of line were torn up in England and sent over to France, and every spare locomotive and spare bit of rolling stock was also sent over. These rails were quickly laid down by the Railroad Construction Corps, drawn largely from railroad builders from the Dominion of Canada. The new lines were operated by the Railroad Corps, recruited from practical British railway men. This of necessity still further reduced traveling facilities in England.

Still further economies were necessary. The men organizing the railway services of the country ever kept in mind the purpose of effecting these economies with the minimum of inconvenience to the public. In July, 1917, an important scheme, going far beyond anything yet attempted, was announced for the coal trade. The carriage of coal was one of the big problems of the railways, for it involved much labor. In the winter of 1916-17, owing partly to delays in railway transit and partly to difficulties in local delivery, considerable numbers of people—particularly the poor—had been unable to obtain supplies of coal with any regularity. It was feared that conditions might be still worse in the approaching winter. This the authorities planned to prevent.

The Controller of Coal Mines published a scheme, dated July 4, 1917, for the purpose of reorganizing the transport of coal by railway for inland consumption. Under this scheme England, Wales and Scotland were divided out into twenty areas and each area had to take its supplies from certain fixed districts of production. It was estimated that the plan would effect a saving in railway transport of not less than 700 million ton miles annually. The scheme was based on four main issues.

- (1) That consumption of coal should take place as near the producing point as possible.
- (2) That in view of the superior facilities offered by the main traffic lines, the movement of traffic should follow these routes wherever possible.
- (3) That the movement of coal should, as far as possible, be in well defined directions—north to south, north to south-east, north to southwest, east to west.
- (4) That an area producing less coal than suffices for its own need should not send any portion of its output to other areas. That an area producing more coal than it requires for consumption within the area itself should only distribute

to adjacent or convenient areas. This scheme did not affect waterbone coal, anthracite or coke of any description.

It was the precursor of other schemes which were to reduce unnecessary traffic in goods to the minimum.

PROBLEMS TO COME AFTER THE WAR

The responsible men on our railways recognize that the problems in railway management and control raised by the war will not altogether come to an end when the war is over. A new era has begun in railway management, and it will be impossible to go back completely to pre-war conditions. Even if it were possible, it would be highly undesirable. While no definite schemes have yet been arranged, it can safely be foretold that there will be greater unity of administration when peace returns than in the old days before war came. Co-operation has proved to be better than cut-throat competition. In the old days the Railway Clearing House at Euston provided the machinery for a limited amount of co-operation, but one dissident could often hold up great reforms. The Railway Executive Committee of to-day is almost certain to develop into a permanent central body, which will act as the coherer, the organizer and the Supreme Court of Appeal among railways themselves when rival schemes threaten conflict. This central body will promote economy of effort. It will prevent extravagant and excessive competition, and it will, if wisely guided, hold the scales evenly between the triple claims of the railway proprietors, the railway employees and the general public.

The second problem is that of wages. Practical railway men maintain that under normal conditions it will be impossible to pay, when the companies emerge once more from government control, anything like the war bonus of 15 shillings per week per man now received. Any attempt to revert to the pre-war wages would probably plunge us into a labor war. What will be a fair and practical wage for the men after the war is over? How can it be paid? If a substantial increase on the pre-war rates is found necessary—as many think it will be—how are the companies to meet it? Are they to be allowed to maintain higher passenger rates or to increase freight charges? If so, will these higher charges mean increased revenue? It is an axiom of management that low fares mean heavy traffic. Here is a matter which will demand the most careful consideration of both railway managements and the men's leaders.

The third problem is that of the future of women's labor on the railways. The companies have promised that men who have left them to serve with the colors will be reinstated on their return in positions equal to those they left. That promise must be kept, and kept to the full. But, unfortunately, many of the men will never return. Women have been found such efficient railway servants that they are certain to be retained. Many branches of railway employment before the war exclusively held by men will, a few years hence, be wholly or almost wholly in women's hands. How can the change which has already taken place be made permanent without strife?

The changed conditions after the war may, of course, provide in themselves a solution for all these possible problems. In the great rush of work to be done when the world is to be repaired, when ruined countrysides are to be rebuilt, great cities re-equipped and the waste of war made good, there will be for a time at least a demand for labor greater even than the supply afforded by a gradually demobilized army. It has been the experience of other generations that a successful nation emerging triumphantly from a hard-fought war has in itself such springs of hope, enthusiasm and inspiration that the impossibilities of other days are tackled and overcome. The British railways may at least hope that, having solved the problems of war traffic and employment in unequalled fashion, they will master the lesser problems of the coming days of peace.

FREIGHT OPERATIONS FOR SIX MONTHS

The monthly report of freight operations of steam railways compiled by the Bureau of Railway Economics for the Railroads' War Board, shows an increase of 14 per cent in revenue ton miles for the six months April to September, inclusive, as compared with the corresponding six months of 1916. The total revenue ton miles handled amounted to 204,702,861,865, as compared with 179,586,351,511. This increase in traffic was handled with an increase of only 2.3 per cent in the number of freight cars in service and 13.9 per cent in the number of freight locomotives in service. Freight train miles increased 5.5 per cent, loaded freight car miles 4.4 per cent, and empty freight car miles 4.9 per cent. The tonnage per train was increased from 626 to 675, or 7.8 per cent, and the tonnage per loaded car from 24.8 to 27, an increase of 8.9 per cent. The average miles per locomotive per day increased from 65.8 to 68.7 and the average miles per car per day from 27.3 to 27.9. The percentage of empty car miles was nearly the same, 30.6 as compared with 30.4. The percentage of freight locomotives in shop or awaiting shop was reduced by 9.1 per

cent, and the percentage of freight cars in shop or awaiting shop was reduced by 7.8 per cent. These figures are for an operated mileage of 225,852.

During the month of September revenue ton miles increased 2.9 per cent, while the average number of freight cars in service increased 3.1 per cent and the average number of freight locomotives in service increased .9 per cent. The number of freight train miles during the month increased .1 per cent and the number of loaded freight car miles decreased 2.9 per cent, while the empty freight car mileage increased 3.8 per cent. The revenue ton miles amounted to 31,500,299,936 as compared with 30,604,074,564 in September, 1916.

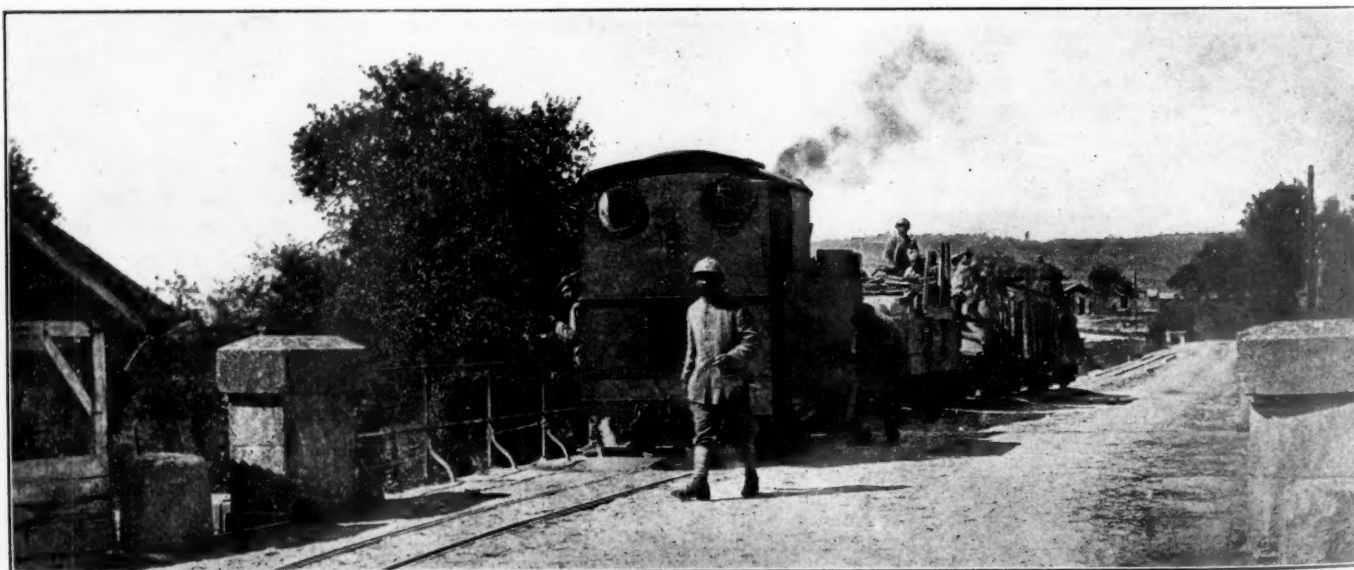
SPECIAL COUNCIL FOR IRISH RAILWAYMEN.—At the present time all the Irish business of the National Union of Railwaymen is dealt with from the headquarters in London, assisted by an organizer in Dublin. To meet the disadvantages of this arrangement the executive of the union has decided to establish an Irish council, which will have authority to deal with all applications for increased wages and improved conditions of service on the railways of Ireland.



Soldiers Unloading Light Railway Sections for a Line in Belgium. Notice How the Sections Are Complete, Ties and All



When German Prisoners Are Available, They Put Them on the Job. Each German Is Marked "P. G.," Meaning Prisonnier de Guerre



Pictures French-Official from Pictorial Press, New York.

The Light Railway Hauling Supplies on the Meuse

Railroad Views on the Valuation Act

Roads Reply to Director Prouty's Memorandum. Contend Act Requires Ascertainment of Final Value

PIERCE BUTLER and Leslie Craven, counsel for the Texas Midland, have filed with the Interstate Commerce Commission a special reply, in the form of notes and comments, to the memorandum recently filed by Director Prouty in the Texas Midland valuation case, with a note stating that it had not been submitted to or considered by the President's Conference Committee and was not filed in its behalf. An abstract of the director's memorandum was published in the *Railway Age Gazette* of October 5, page 599. An abstract of the reply, which discussed some of the principal questions raised in connection with the valuation proceedings, is as follows:

SHALL VALUE BE FOUND?

The director's memorandum, while professing to rely upon the contention in the solicitor's brief that the act does not require the commission to ascertain or report value at all and that it is impossible to fix ultimate value except for a particular purpose, strongly supports our contention to the contrary. The director there says that he, as a member of this commission, several times joined in recommending to the Congress that it should provide for a valuation of railroad property and that in so doing he understood that a valuation in dollars of the property as a whole was called for; that there can be little doubt that a majority of the members of the Congress which enacted this measure understood that it provided for a statement of the value of the properties dealt with in money, and that the act was so accepted by the country at large. No one can reasonably contend that the language of the act is not plain upon the point. The director suggests that ultimate value for rate making purposes should be stated, and that the full benefit of this valuation cannot be realized unless this be done; that uncertainty is the vice of the railroad situation today; that, if the present system of providing public service by private capital is to be continued, some way must be found to assure that capital of the treatment it will receive, and that he does not know how this can be done until the value of the property now devoted to that service has been determined.

Particular purposes, among others, for which the valuations required to be made by this act are by the act specifically declared. The solicitor's contention that it is impossible to find value, except for a particular purpose, ignores the fact that by the plain language of the act it is contemplated that the valuations may be used in numerous cases and for many purposes.

The adoption of the solicitor's views would deprive the railroads and the public of the advantages which the commission by various recommendations from 1888 to 1912 intended to secure, which the Congress plainly granted, which the public understood would result from the passage of this act, and it would continue the great vice of uncertainty mentioned by the director.

The director's memorandum in substance agrees with the contention of the Texas Midland that its property is not typical of the railroads of the country and that it should not be taken as a test case. As far as we know, the same may be said of the Norfolk Southern, Atlanta, Birmingham & Atlantic, New Orleans, Texas & Mexico, and Los Angeles & Salt Lake. The important principles involved should not be settled upon the facts included in the tentative valuation in this case. We have so contended from the first, and are gratified to find that the director in substance agrees.

Without citation of authority it is said:

"* * * It (value) has been described by the courts and is that sum upon which under all the circumstances and upon a fair consideration of all the facts and elements to be taken into account a fair return should be permitted."

The failure of the director to cite the language of the courts or the cases from which *his description* of value is derived is regretted. Is this description sufficiently definite to mean anything? What facts are to be considered? Would not this description apply as well in a condemnation case as in a confiscation case? How, if at all, is the value here described to be distinguished from value in its true economic sense? The director cannot mean that *any sum* that happens to be so fixed by any commission as a rate base is therefore *the value*. Does not "fair return" as used in his description mean "just compensation" as used in the fifth amendment to the federal constitution? Is not that clause, so far as federal action is concerned, and the equal protection and due process clauses of the fourteenth amendment, so far as state action is concerned, the source of power of the courts to restrain and set aside laws and orders prescribing confiscatory rates, i. e., rates which take property of the carriers without "just compensation"? Is not "just compensation" for property taken for public purposes *the value thereof*? Is not a reasonable return upon that value "just compensation" in rate fixing or other price fixing cases? As stated by Mr. Justice Lamar (233 U. S., 389): "The fixing of the price for the use of private property is as much a taking as though the fee itself had been condemned for a lump sum * * *." That contemporaneously the value of the same railroad property is the same in a rate confiscation case as in a condemnation case is clearly established by the decisions of the United States Supreme Court.

CLEARING AND GRUBBING

It is reasonable to assume that, in the ascertainment of the cost of reproduction, the *existing property* should be the basis, and that grading quantities in reproduction should be the actual quantities involved in the construction of the property as it exists; that excavations and embankments should not be assumed to have been made in whole or in part in advance of the commencement of the work which forms the basis of reproduction; that stumps,—like stones and other formation,—which were in fact removed in order to make the excavations and embankments should be included at proper prices.

In ascertaining clearing and grubbing quantities, present conditions of adjacent and adjoining lands are assumed and thereby a part of the work which *was actually done* to build the railroad is eliminated. The present condition of adjacent and adjoining lands discloses thereon crops, fences, drains, buildings, etc. If these conditions be adopted, then cost of reproduction new must include the amounts of money which on valuation date would have to be paid by the carrier to cover damages sustained by the owner by reason of the taking of his crops, buildings, etc., in the acquisition of its lands, rights of way and terminals. It is not reasonable to assume as the basis of ascertaining cost of reproduction new that the lands, rights of way and terminals of the carrier would be unused and naked of planting, fences, drains, buildings, other improvements, etc. Yet, it appears to be so assumed, and the tentative valuation does not in any account contain a dollar to cover such damages or the cost of clearing and removing the same

from the right of way and lands of the carrier to make the same ready for railroad construction, use and maintenance.

The director's method is unjust. On the basis of *present conditions*, it excludes clearing and grubbing which was actually done. On the basis of *original conditions*, it excludes the present cost of crops, buildings and other improvements for which the carrier must pay to secure its right of way and terminal lands. *Ignoring both original and present conditions*, it excludes the cost of buildings which were in fact upon the land when acquired, or which, on the basis of present condition of adjacent and adjoining land, would on valuation date be upon the right of way and terminal lands.

If the tentative valuation includes anything whatever directly or indirectly for removing buildings from the right of way or terminal land either upon the basis of original conditions or upon the basis of present conditions, we have been unable to discover the same, and we doubt whether anyone in the division can point out the same, or indicate the amount thereof.

The methods suggested in the director's memorandum and which, so far as we can learn, were employed to make the tentative valuation in this case would exclude from the cost of reproduction of terminal facilities,—like the Pennsylvania and New York Central stations in New York, the Kansas City terminal, the Northwestern station in Chicago and the Union Depot in Chicago now being constructed—the sums actually paid for buildings on sites when acquired and the cost of destroying and removing the same. Present and original conditions are ignored. Contrary to fact and contrary to reasonable hypothesis, the ascertainment of reproduction cost is made upon the assumption that the lands, rights of way and terminals would be vacant, unused and cleared off in advance, all ready for construction.

INDUSTRY TRACKS

The tentative valuation in this case omits from the cost of reproduction new and cost of reproduction less depreciation many items of property which are owned or used by the carrier for its purposes as a common carrier. For example, there are omitted 14 miles of main line used by the Texas Midland jointly with the Cotton Belt under an agreement with that company which is the owner thereof subject to the right of the Texas Midland to use the same; passenger facilities at Paris; passenger facilities at Ennis; freight facilities at North Ennis. All of these are used by the Texas Midland in the service of the public under arrangement with other companies, the owners thereof, subject to the rights of the Texas Midland. There are omitted the lands upon which are located practically all of the industry tracks used by the Texas Midland in the service of the public; all telegraph property along the line of the railroad used by the company; materials and supplies; working capital, etc.

That these industrial tracks are *used* by the Texas Midland for railroad purposes cannot be denied. The fact that the railroad company does not own an indefeasible title to these lands, or, if it be a fact, that the owners of the land may terminate the use, is immaterial so far as the inclusion of the same in the inventory required by the valuation act is concerned. Absolute title is not acquired by eminent domain, but that makes no difference in value.

The suggestion to the effect that industrial track right of way land and improvements thereon should be excluded from reproduction cost upon the hypothesis that in reproduction the land will be furnished and the track constructed exactly as they were originally is without foundation and a violation of the act. The act requires that there shall be ascertained the cost of reproduction new in detail of each piece of property owned or used. It does not make any difference who paid for it or whether it was paid for at all.

There is no ground for excluding from the inventory donated right of way or terminal land, or grading, buildings or other improvements donated to the carrier by the public or by individuals as an inducement for the completion and operation of the railroad. The original cost and financial history report will disclose the facts as to the original expenditure. There must be reported the original cost, the cost of reproduction new and the cost of reproduction less depreciation of the thing, *i. e.*, in detail as to each item of property, that is *owned or used* by the carrier for its purposes as such.

The suggestion that the carrier has not devoted such property to public use is without foundation. It is used by the carrier in the public service. The fact, if it be a fact, that some or all of the elements have been donated by individuals, municipalities, the state, or the nation cuts no figure. The act expressly provides for the inclusion of donated items together with the value thereof at the time of the gift and at the present time. This commission held in the *Car Spotting Case* that these tracks are terminals of the carrier. The carrier is bound to use them in the public service.

The rules laid down by the director are plainly in violation of the valuation act. This act requires the inventory to include in detail each piece of property *owned or used* by the carrier for its purposes as such. The director makes ownership the test. He reads the phrase "*owned or used*" as if it read "*owned and used*." Attempt is made to excuse or justify this disregard of the plain language of the act by the suggestion that the carrier has no such interest in the land as to make that the basis of a *claim for earnings*. But the basis of rates is not involved. Non-carrier property is required to be included in the valuation.

The director is inconsistent. He holds that the act does not require value to be found. He holds that the exact terms of the act as to inventory, reproduction cost, etc., must be followed. He then disregards the plain language of the act which requires each piece of *owned or used* property in detail to be included in the inventory and the reproduction cost thereof to be shown, and which provides that the present value in detail of all of the owned or used lands, *rights of way* and terminals must be ascertained and included.

All the attempted justifications or reasons for omitting industrial tracks rest upon the assumption that the sole purpose of the valuation act is to produce a figure called value for rate making. This assumption is contrary to the fact.

The director described value for a rate base to be "that sum upon which * * * a fair return should be permitted." He denies that this is the *value* of the property as value has always been understood by economists. He says that, as a member of the Interstate Commerce Commission in recommending that Congress provide for a valuation of railroad property, he understood "that a valuation in dollars of the property as a whole was called for"; that Congress "understood that it provided for a statement of the value of the properties dealt with in money," and that the act "was so accepted by the country at large." He now appears to distinguish between the value of the railroad property of the carrier as a whole and "an ultimate value for rate-making purposes." But the reports and recommendations of the commission in which he joined, set forth the reasons why the commission wanted the valuation which it recommended the Congress to provide for:

- (a) To obtain a trustworthy estimate of the relation existing between the present worth of railroad property and its cost to its proprietors;
- (b) In determining whether rates as fixed by the government are confiscatory;
- (c) In connection with railway taxation;
- (d) In the ascertainment of a proper depreciation reserve;

(e) In testing the accuracy of the balance sheets of the carriers;

(f) To the organization of railway statistics in general;

(g) In determining whether the railroads are under or over-capitalized.

The language of the act and its legislative history show that the purpose of valuation is not limited to rates. Value in rate confiscation cases is the same as in condemnation cases. There is no foundation for the assumption that value depends upon the purpose of the appraisal. Any such assumption would leave us without guide. It would substitute the personal conceptions of the appraiser as to right and wrong in each particular case for the well settled principles of law which guide the judicial determination of value.

Even if the sole purpose of the act were to produce a figure for rate making purposes, industrial tracks would have to be included. Governmental authority cannot compel a carrier to use property for the service of the public, and withhold just compensation because the utility has less than the full title or no title.

PROPERTY USED JOINTLY WITH OWNER

As to property *used jointly with the owner* the positions indicated by the director's memorandum may briefly be stated as follows:

(1) While holding that *value* is not required to be found, it is conceded that the proceedings under the valuation act are for the purposes of valuation, and that sometime this commission or some other tribunal may or can use the facts found and reported for the purposes of ascertaining the value of the property owned or used by every common carrier. "The purpose has been to *value* all common carrier railroad property once and but once."

(2) Property jointly owned by two or more railroad companies is inventoried in the valuation of each.

(3) Property owned by one railroad company and exclusively used by another is inventoried to the owner but it also appears in the inventory of the user.

(4) Property owned and used by one railroad company which by lease or other contract arrangement grants joint use to another is inventoried to the owner and classified as owned *and* used by the owner. Reference is made to the fact that it is used by the lessee but the valuation of the latter omits all consideration of the same.

Under the above stated rule (2), certain railroad facilities jointly owned and used by the Texas Midland and one or more other railroad companies is included in the inventory and the cost of reproduction new and cost of reproduction less depreciation is shown and ownership is shown. The cost figures are divided by the number of owners. The same facilities will in the same way be included in the inventories of each of the other owners. *The director does not claim that this involves any duplication.*

Under the last mentioned rule there have been excluded from the valuation of the Texas Midland 13.97 miles of the main line, a passenger station at Paris, a passenger station at Ennis, and certain freight terminals at Ennis. Each of these jointly used properties is covered by a lease from the owner to the Texas Midland, and that company has property rights to and ownership in each of the same and uses the same in the service of the public for its purposes as a common carrier.

The valuation act requires the commission to investigate, ascertain and report the value of all the property owned or used by every common carrier. It requires the commission to make an inventory which shall list the same in detail according to the prescribed classification of accounts. It requires as to each piece of property owned or used for carrier purposes that there shall be reported in detail the original cost to date, the cost of reproduction new and the

cost of reproduction less depreciation. It requires that there shall be reported the present value of the lands, *rights of way* and terminals owned or used by every common carrier for its purposes as a common carrier.

Each of the jointly used properties in question is admittedly used by the Texas Midland for carrier purposes and under the plain language of the law must be included in detail, in the inventory and valuation. When details are stated in one inventory inclusion in the other inventory or inventories may be made by reference.

We insist that a *reporting of the facts* involves no duplication. There is no more ground for claiming that the report we here insist upon would be a duplication than there is for claiming that the director's methods for the handling of jointly owned property and property owned by a railroad company but used exclusively by another involves duplication.

We insist that there is no reason why property used jointly with the owner should not in valuation be shown in the inventory in the same manner as the director indicates for the treatment of jointly owned property and property owned by one railroad company and used exclusively by another. *No duplication is, or would be, involved.* The extent of the use of each railroad jointly using such a facility can easily be determined. The extent of the use of the Texas Midland is admitted by written stipulation in this case as to each of these joint items. The director's point to the effect that it is not possible to define the extent of the use in such cases has no application here, and we think is without merit in any case. No additional expense will be involved. The property in question must be listed in detail, the cost figures must be shown. When this has been done and the figures have been included in one inventory reference thereto is all that is necessary in the inventories of other joint users.

APPRECIATION

Appreciation comes with the lapse of time and use. It is an increase in worth due to an intrinsic physical improvement over and above what the same property item or element would be if new. It may be produced by labor, or it may result from the work of nature, or both. It is found in the roadbed, embankments, slopes or other parts of the property. As we understand the director's memorandum on this subject he agrees with us. It is a part of his platform, reiterated in different forms and places, that the act requires a statement in some form of every fact which might have a bearing upon the final value of these properties.

The Texas Midland Railroad has at all times been properly maintained, and on valuation date it was in proper condition for the service it is required to perform. The evidence establishes the fact that appreciation existed on valuation date in a large amount. Upon the undisputed testimony of all witnesses it could not be less than \$61,000 and the evidence justifies a much higher amount. As it is admitted that appreciation exists and should be included, and, as there is no contradiction of this testimony, we insist that the same should be allowed.

Some of the causes from which appreciation results are set forth in the director's memorandum. For a long time after the construction of a railroad the grading and other items of the way are worth much less than the same would be in the solidified and stable condition which results by use, lapse of time and proper maintenance. During this period the cost of maintenance is excessive in comparison with what the same would be if appreciation had matured. Some of the appreciation results from the expenditure of money for labor, and some results from other causes. The excess work necessarily performed during the initial period is properly *deferred construction work* and the expense thereof properly should be charged to cost of road. But so

far as the ascertainment of the value of the property is concerned, it is immaterial to what account the charges for such labor have been made, or ought properly to be made; it makes no difference whether the improved condition and the enhancement of value result from the performance of labor or by the mere lapse of time and use. Every element of value must be included. It makes no difference whether the same was paid for at excessive, moderate or too low prices or at all; the source of the fund from which the payments were made is immaterial. If an element of value exists, it belongs to the carrier and must be included and reported. As stated by the director, the Congress intended " * * * to provide for the statement in some form of every fact which might have a bearing upon the final value of these properties." At the time of the passage of this act it had long been settled in valuation practice that the *replacement* method involved the ascertainment of the cost of reproduction plus appreciation, if any, and less depreciation, if any. As shown by the director the Supreme Court of the United States has said that appreciation should be added.

The director suggests that appreciation is due to the action of nature, not to any extent to what the carrier has done; that the efforts of the carrier have only replaced the depreciation, so to speak, upon the outside; that they have simply kept good the form of the property without having increased or improved it. It is suggested that under the present rules of the commission these expenditures are chargeable to operation and that they do not represent any addition to the property itself which is a capital charge. It is suggested that appreciation has not been produced by any act of the carrier and that it has not involved any expenditure of money upon the part of the carrier. It is suggested that the cost of appreciation, which was paid for, is contributed by the public.

We do not understand that the director makes the foregoing and other like suggestions in support of a contention that appreciation when found to exist should not be allowed. We do not understand that he claims that in this valuation a foundation should be laid for the omission of any property or element of value, either in rate cases or in condemnation cases. It is true that some elements of appreciation result from the action of nature and from the use of the railroad and that other elements of appreciation result from the expenditure of money in properly maintaining the railroad. The accounting rules of the commission do not relate to value. They merely prescribe the manner and form of keeping *certain parts* of the cost of railroad property, and *cost* (not value) is recorded whether such cost exceeds or is less than value. If, in order to obey the valuation act, it shall become necessary to modify the accounting or other rules of the commission, then they must be changed. If there shall be found any inconsistency between these rules and the act of Congress, the latter must prevail. Even if all the appreciation on an entire railroad system was paid for out of the earnings of a carrier, it belongs to the carrier and must be included in the valuation.

The testimony of the carriers introduced on the general subject of appreciation not only demonstrated—as is now conceded—that appreciation exists but it also points to a method which properly may be used as a guide to ascertain the amount thereof. The evidence showed a comparison of the labor cost of maintenance of a new line before the property had appreciated with the corresponding cost of lines of varying ages, some of which were forty years old. The nature of the problem does not permit determination with mathematical exactness. Doubtless, it is true that the value of such comparisons will vary as the lines compared differ in characteristics affecting the matter. The director's criticism is *verbally* true to the extent that the figures introduced by the carrier's witnesses do not measure with mathematical exactness the amount of existing depreciation,

but, if it be intended thereby to suggest that proof of that kind is not pertinent and may not be used as a guide to arrive at the truth, the criticism is without foundation and violates common sense and rules usually employed to ascertain value and other facts which are not capable of determination with arithmetical exactness, as pointed out by the language of the Supreme Court above quoted.

We agree with the statement of the director to the effect that it was the evident intention of the framers of this act to provide for *the statement in some form of every fact which might have a bearing upon the final value of these properties*, and that it was the plain intent that the condition of the property at the date of the valuation be shown. We insist that the reservation by the commission of the analysis of methods, required by paragraph "Second" of the act to be made and reported, until after conclusion of the final hearing on the carrier's protest is contrary to the plain provisions and intent of the act, and is without any justification whatsoever. In the absence of protest, the tentative valuation becomes final by the mere lapse of time. It follows that the tentative valuation should be in form and substance the same as the final valuation. No one has ever suggested a reason founded upon justice or convenience for withholding from the carrier the methods employed to ascertain the "costs" of its property. An orderly compliance with the act requires that methods be first adopted. They necessarily affect the result. The tentative report should be in such form as to furnish an opportunity for the carrier at final hearing to discuss the propriety of the methods employed by the commission in making the tentative valuation. The ultimate value conclusion depends upon evidentiary facts and findings which must be disclosed in detail. The final value required to be reported is not like a verdict of a jury concerning the manner of reaching which no inquiry is permitted; the act specifically requires full disclosure of facts, methods and reasons involved in reaching final value, and this is to furnish to the carrier and others the means by which the final conclusion may be tested.

We contend that the evidence which is uncontradicted abundantly sustains the claim of the Texas Midland that at least \$61,000 should be included on account of appreciation. If for any reason the commission shall be of opinion that the evidence, though uncontradicted, is not sufficiently specific and certain to enable the commission to find a definite sum, then there should be further investigation. This, as we understand, is in harmony with the suggestion of the director.

DEPRECIATION

In dealing with "Depreciation" in his memorandum, the director of valuation reaches the conclusion that such parts of the property as rails, ties and the like, even when maintained by proper renewals in a state of 100 per cent efficiency, must be regarded as being depreciated 50 per cent. Hence, in determining the capital invested as represented by the cost of reproduction less depreciation, one-half of the capital expended for such parts of a railroad property as the rails, ties, etc., must be deducted, leaving as the value of the property thus determined, that is, the amount upon which a fair return may be earned or the amount which must be paid in case the government takes the property, a sum equal to only one-half of the capital outlay for such rails, ties, etc. This means the loss to investors in railroad property of millions upon millions, admittedly a part of the capital actually and necessarily expended in the production of the property, and would have to be expended in its reproduction. The obvious injustice of such a result is sought to be justified or palliated on the assumption that at some time in the early history of the railroad, before this 50 per cent of the amount expended for these so-called perishable items had disappeared, the railroad received in earnings from the

shippers of this early period, not only enough to pay a return on the investment in such items and the expenses, including necessary replacements or renewals, but in addition enough to reimburse it for one-half of the capital outlay for such items. In other words, although these early shippers have properly been charged enough to make all necessary repairs and replacements, it is assumed that they also unjustly have been charged enough to return half the original investment in these items and consequently that present shippers should be required to pay a return on only one-half of this portion of the original investment. It would be interesting to know upon what reasoning the director reached the conclusion that it was necessary or proper for a railroad to compel past shippers to purchase, as it were, one-half of the slowly perishable portions of the property for the benefit of future shippers.

CONTINGENCIES

The conclusion of the director is that no general overhead charge should be made on account of contingencies, but that any allowance of that kind which ought to be made should be taken care of in connection with particular items. The particular items referred to in the memorandum apply: To buildings on account of contingencies or contractor's profit, or both; to cover that element of uncertainty which exists in every estimate; to work in connection with grading not embraced in the contract price; to changes of highway and construction of a ditch off the right of way, etc.; to damaged embankments after completion by the contractor and acceptance by the railroad.

The memorandum says, " * * * No allowance has been made for contingencies, as such, * * * in the tentative valuation of the Texas Midland * * *." The tentative valuation does not state that any allowance whatever has been made for contingencies. The methods employed are not disclosed by the tentative valuation in this respect. It does not appear from the tentative valuation or the evidence offered by the division how much, if anything, has been included in unit prices, or any item, to cover the element of contingencies. General statements have been made to the effect that while contingencies *as such* have not been allowed the same have been taken into account in unit prices. We insist,—and we understand the director has agreed with us upon this point,—that proper practice requires that it should be made plainly to appear whether or not anything whatever is allowed in any account to cover contingencies, and, if any allowance is made, the amount thereof should be disclosed. The methods employed must be reported. They should not now be withheld. Mr. Worley testified, that it is the valuation practice in estimating reproduction cost to allow for contingencies, and that the amounts so allowed range from 5 to 10 or even greater percentages. The director's memorandum in substance so admits. But, contrary to the established practice and the proof, the director recommends that no allowance for contingencies be made, excepting in the instances above referred to.

The Texas Midland,—as is the case with a majority of the railroads,—was constructed a number of years ago and the records of the construction work are incomplete. Because of this, as we understand, a survey and a re-measurement was decided to be necessary by the commission in order to ascertain reproduction cost. The question here involved is whether, as a practical matter, the quantities and character of the work involved in the roadbed and other important elements of the property can be determined with such accuracy that no allowances are necessary to cover the elements of uncertainty necessarily attending the work. A reproduction estimate based upon complete maps, profiles, original cross-sections, and construction records presents a case quite different from such an estimate based upon present inspection and a survey of the roadbed without the aid

of such records. The original ground surface cannot be determined with accuracy by mere field work, nor can the amount of subsidence of such surface or shrinkage of materials. The dimensions of masonry under ground are often unknown and the foundation features hidden. Concealed drainage and *many items of work* will be overlooked or not recognized as being a necessary part of the cost of building the railroad.

The director's conclusion rests upon mere assertion that government valuation engineers are able to find and do find 100 per cent of existing quantities, and can foresee and do in fact take into account, 100 per cent of the unknowable facts, conditions, difficulties, accidents, disasters, delays, and lack of co-ordination which necessarily attend the construction of every railroad. This is contrary to experience and established practice. State commissions, valuation engineers and appraisers of the greatest ability make appropriate overhead allowances to cover contingencies.

ENGINEERING

The director does not claim that the original cost of engineering of this property has been or can be shown. The tentative valuation reports that original cost to date cannot be found. When the railroad was built there was no prescribed classification of accounts. As we understand the director, he holds that the original cost to date of engineering, even if that could be shown with accuracy, should not control or measure the cost of engineering to be included in the cost of reproduction. The tentative valuation allows \$54,926 to cover engineering. This is about $2\frac{1}{8}$ per cent of the road accounts excepting engineering and land. The railroad is relatively simple and cheap. It is generally conceded as true that in cases where construction is relatively inexpensive the *percentage* of engineering cost to the total of the road accounts, excepting engineering and land, should be relatively high. The amount fixed in this tentative valuation is approximately the lowest per cent that the member of the engineering board in charge of the work is authorized to apply without specific authority from Washington. No reason is given why the general rule that the lower the cost the higher the engineering *per cent* does not apply here.

The director defines two methods of arriving at the amount properly allowable to cover the cost of engineering. These are defined as the synthetical and the historical. The synthetical method is similar to the reproduction method of estimating costs of construction. When based upon exact knowledge of the work required and practical experience in doing similar work, it is reliable. The estimate made by Mr. Newton was of this character.

The opinion or percentage method, with certain qualifications, is the method now employed by the division of valuation. Although the director refers to this method as the "historical method," or one in which the cost of reproduction is based upon the experience of the past as shown by construction records, an examination of this method makes manifest the impropriety of that designation.

The percentage used by the division of valuation is only slightly above what the records of the carrier show. These records undoubtedly are not complete. The extension was built in a year when the financial conditions in Texas were worse than at any time in its history, and the costs of work at that time are no criterion of reproduction costs. Nothing is known as to the accuracy of the costs shown by the Texas Central records.

GENERAL EXPENDITURES

It is quite apparent that the group of accounts included under the head of "General expenditures" did not receive proper attention. The director's memorandum says, "The member of the engineering board in preparing his report upon the Texas Midland has distributed general expendi-

tures over the different accounts, allowing a certain amount for each account." The director concedes that "it does not appear upon what basis the allowances were made by the member of the engineering board, * * *." The indefinite—and so far as appears the arbitrary—method of fixing these figures is illustrated by the language of the engineering report. For example, as to Account 71—Organization expenses, it is said: "Under this account was included a charter fee, as required by the statutes of the state of Texas, and a few other incidental expenses."

As to Account 72—General officers and clerks, it is said: "An estimate was made of the necessary executive and general officials, clerks and their expenses, necessary to the construction of the property."

As to Account 73—Law, it is said: "Under this account has been included the necessary legal expense, including clerks, stenographers, office rent, and other expenses incidental thereto. Nothing has been included in this account covering the expense of the acquisition of lands or right of way."

As to Account 75—Taxes, there was allowed an amount "equal to one-fourth of the total amount of taxes paid by the Texas Midland during the year 1914." Mr. Worley, member of the engineering board, did not depreciate organization expenses, general officers and clerks, or law, but does depreciate taxes. The director does not appear to support the tentative valuation in this respect as in the memorandum it appears that he favors depreciating the whole group. This group of accounts in the tentative valuation in this case well illustrates the disregard of that provision of the valuation act which provides that there shall be "an analysis of the methods by which these several costs are obtained, * * *."

The language of the act upon this point is plain. No one denies that the methods employed are required to be stated in detail, *i. e.*, "an analysis" of methods must be made. If methods were considered and settled in advance, they are not disclosed in the tentative valuation. The Texas Midland claims that the tentative valuation should report the methods employed in the valuation of its property and that it has a right at the final hearing to test the reported figures by the principles adopted and methods employed. We have never heard any reason why the tentative valuation and report should omit a statement of the methods employed to make it.

COST OF OBTAINING MONEY

It will be observed that the discussion in this chapter of the director's memorandum is not confined to interest during construction as that account is defined in the classification. It is the cost of obtaining the money which includes not only the items of expenditure specified in the definition of the account "interest during construction," but also includes the cost of obtaining the money, such as syndicating, banking and other expenditures not included in the interest account. It does not appear to be claimed by the director that *any facts in the Texas Midland case* would justify the suggestion contained in paragraph 2 that one-half of one per cent., or that one per cent., would cover the brokerage charge or the cost of commissions, syndicating, banking, etc.

The assumption that the credit of the Texas Midland is or would be good enough to enable it to borrow money to build its railroad or to extend its existing road upon a six per cent basis is without foundation in fact.

But even assuming as a basis for the estimate that the credit of all companies is *good and the same*, six per cent is too low a rate of interest to cover not only interest but the entire "cost of obtaining the money" including commissions, syndicating, banking and other expenses.

The Texas Midland claims that the rate of interest on any reasonable assumption of facts *applicable to its situation* should not be less than eight per cent and that in addition

thereto it would have to pay commissions covering syndicating, banking and other expenses of at least one per cent.

CONSTRUCTION PERIOD

The question of what should be the length of the assumed construction period is entirely a question of engineering fact. Its decision depends upon the peculiar facts of the particular case. The record discloses no detailed study on the part of government engineers. The testimony of Mr. Worley shows that he had given no study to the determination of the program of construction, and that he had no definite idea of any necessity of investigation of the problem or of its influences upon interest, other general expenditures, unit prices, etc. He showed a lack of familiarity with practical questions which are determinative of the period which should be assumed.

The carrier called two witnesses who had studied this question from the practical standpoint of Texas Midland conditions. Mr. Holbrook's testimony shows a very careful analysis based upon intimate knowledge of local conditions and proves very conclusively that the length of the assumed construction period has an important influence upon unit prices. This is true because rush jobs cost more and haste increases the risk. If time is short bids will be higher. Mr. Holbrook was of the opinion that 24 months would be required for the actual construction of the property. This study is based upon a personal reconnoissance and survey of several lines in Texas, three of which either crossed the Texas Midland or were in the immediate vicinity.

An analysis of the same problem was made by Mr. Newton. His analysis developed the necessity of a construction program contemplating a construction period of 28 months preceded by a four months' period for preliminary surveys and contemplated that 75 per cent, of the ballasting would be done subsequently. The testimony of Mr. Holbrook and Mr. Newton is harmonious. It is based upon the same sort of analysis and experience and is not contradicted. The record shows conclusively that the particular facts involved in the problem on the Texas Midland was not studied by the government engineers. As there is no supported opinion in opposition to the reasonable and well sustained testimony of Messrs. Holbrook and Newton, their views should be adopted and the tentative valuation should be changed accordingly.

INTEREST DURING CONSTRUCTION

The director's memorandum in substance admits that the valuation act requires that the present cost of procuring the right of way be ascertained and reported as part of the reproduction cost of the railroad. This has not been done or attempted in the Texas Midland case. As shown by exhibit introduced in connection with the testimony of Mr. Newton by far the largest part of the expenditure for lands, rights of way and terminals will be made in advance of the commencement of actual construction. It follows as a matter of course that the moneys so expended must be in readiness in advance of the need therefor, and that the same will bear interest during a relatively long period of time. The exhibits introduced in connection with the testimony of Mr. Brown, the commission's accountant, bearing upon the rate of expenditure of money in railroad construction, omitted land costs from consideration. As the amount of such expenditures is sometimes as high as 20 or more per cent of the total, this omission renders the Brown exhibits of little, if any, importance so far as interest during construction is concerned.

The director's suggestion that the allowance in the Texas Midland case of \$144,691 be increased to \$166,728 excludes all allowance of interest on account of expenditures for land. The cost of reproduction must include the present cost of acquisition of lands. Interest thereon must be included.

After further consideration by the division it is concluded

that interest at six per cent for one-half the period produces too low an amount. As we understand it, the director's memorandum suggests that an additional three months be allowed.

Heretofore we pointed out that the testimony of Messrs. Holbrook and Newton in this case shows that the construction period allowed by Mr. Worley—4 months for preliminary work and 14 months for construction—is too short; that the period supported by Messrs. Newton and Holbrook is sustained; that the testimony of Mr. Newton as to the percentage of the total amount which would be expended in each period is uncontradicted; that the same shows—as now appears to be admitted by the director—that one-half of the construction period is too short to be used as a basis for calculating interest at six per cent on the entire sum, and that the amount properly allowable therefor is in excess of interest on the entire sum for two-thirds of the construction period. In the light of these facts we contend that, if any rule for general application is now to be stated, it should be that interest on the entire sum at an appropriate rate should be calculated for at least two-thirds of the entire construction period.

The original cost of the Texas Midland lands as reported in the tentative valuation is incomplete. The land was acquired long ago. Since then the lands along the line of the Texas Midland have greatly increased in value. In this case, original cost at time of construction is so much less than present value that it is not an important indication or item of evidence. It is now quite impossible, we think, to divide the total original cost so as to show separately the so-called "acreage value" at the time of acquisition, or the cost in excess of the same. The suggestion of the director to the effect that the multiplier disclosed by actual purchase at time of construction would be applicable now is without foundation. Conditions have changed.

In the tentative valuation no attempt was made to show the cost of acquiring the lands, rights of way and terminals of the Texas Midland at the present time. The carrier's proof in the case establishes it. There is no conflict in the evidence as to the proper ratio or multiple. There is conflict in the evidence bearing upon the naked land value of adjacent and adjoining lands—the basic figure. If a multiple of 2.23 be applied to the basic figure reported in the tentative valuation for the lands classified by the division as used for transportation purposes there will be produced \$527,816. If applied to the figures which the carrier's testimony supports there will be produced \$628,474.

Present value is at least as much as such present cost of acquisition.

OTHER VALUES AND ELEMENTS OF VALUE

As to other values and elements of value the tentative valuation fails to comply with the law. The commission is directed,

"* * * The commission shall in like manner ascertain and report separately other values, and elements of value, if any, of the property of such common carrier, and an analysis of the methods of valuation employed, and of the reasons for any differences between any such value, and each of the foregoing cost values."

This important matter is treated in the tentative valuation in the following words: "No other values or elements of value were found to exist." We do not know what meaning that statement is intended to convey. It is plain that the law requires these "intangibles" to be ascertained and reported. They must be considered in the ascertainment of final value.

The director suggests that no evidence was offered by the carrier upon this point. We are sure that he will agree that as to these other values and elements of value it is as much the duty of the commission to investigate and ascertain the facts as it is to inventory the physical property in detail and show the several costs thereof as required.

The commission has before it all of the facts referred to in the tentative valuation. These include the inventory, the cost figures, the land figures, the financial history, the traffic statistics, the net and gross earnings in detail, the expenditure of moneys, etc. The gradients, the station facilities, its connections, its sources of traffic, together with the growth thereof as shown by the regular reports of the company are known or are available. The amount of intangible value fixed by Texas for the purpose of taxation is shown. This great mass of information furnishes a sufficient *basis of fact* for the determination of the value of the properties of the Texas Midland as a whole. The commission has quite as complete information as usually is furnished to the courts in confiscation cases involving the value of railroad properties.

The Texas Midland is a small and simple property. It has no valuation department. It would have been proper for it to call witnesses experienced and expert in the ascertainment of the value of railroads. The commission also had the right to avail itself of the services of like experts or to determine the fact without such aid. It cannot be said that the value of the Texas Midland property cannot be ascertained on the facts now in the possession of the commission, without the aid of expert witnesses. That value, while a unit and single in substance, may, for the purposes of thought and discussion, be divided between that which is attributable to the tangible or physical property and that which is attributable to the intangible or non-physical property, *i. e.*, other values and elements of value. There is no denying that the act requires other values and elements of value to be found. This may be done by first ascertaining the *value of the property as a whole* and by deducting therefrom the amount which the commission finds should be attributed to the tangible or physical elements thereof.

The commission is now engaged under the act in ascertaining the value of all the railroads in the country. The Texas Midland is of minor importance. The difficulties of the problem before the commission are great. We have always contended,—as said by the director,—that neither this railroad nor any of the other railroads whose tentative valuations are on hearing before the commission present the phases of the subject of valuation which should be before the commission before it lays down any rule for the determination of a final value. Under the circumstances the commission should defer the determination of the other values and elements of value in this case until right principles shall have been found upon a full consideration of a sufficient number of typical railroads.

COAL MINE PRODUCTION SHOWS A NET DECREASE

In discussing the general need of fuel conservation in the boiler rooms, Van H. Manning, director of the Bureau of Mines, Department of the Interior, has issued the following statement:

There is one phase of the present coal situation which may put an entirely different light on the supposed increased production of coal of the present year. In round numbers, there was produced 600,000,000 tons of fuel last year. The statement has been made that 50,000,000 more tons will be mined this year. The preparation of this increased quantity of coal has not been as good as in times past. Analyses of samples show in many cases a greatly increased quantity of ash. Repeated cases are brought to the attention of the Bureau of Mines where coal which would run from 6 to 8 per cent ash in normal times is running from 12 to 18 per cent of ash in these abnormal times. Complaint about the preparation of coal is very general and it is not at all improbable that 5 per cent more ash is included in this year's coal than in previous years. If such a figure is true, it

means that 32,500,000 tons of the estimated output of 650,000,000 tons is nothing but increased ash.

If we can imagine over 600,000 car loads of ash being added to the present burden of transportation, the evident effect on car supply and transportation troubles would be seen. If this were the end of the matter, it would not be so bad, but there is another factor well known to engineers which is apt to be overlooked by the non-technical user. The extensive experiments carried on by the Government at the St. Louis Exposition showed that with the coals used, there was a decrease of about $1\frac{1}{2}$ per cent in efficiency for each 1 per cent addition to the ash content of the coal—that is to say, the inclusion of more ash with the coal decreases the value of the fuel not only the amount equal to the useless ash, but it makes the remaining good coal less effective to the extent of $1\frac{1}{2}$ per cent for each 1 per cent of ash. The inclusion of 5 per cent more ash in the fuel, therefore, means a reduction in efficiency of the remaining good coal of about $7\frac{1}{2}$ per cent, which, added to the 5 per cent useless ash, makes a total reduction in effectiveness of $12\frac{1}{2}$ per cent.

According to this point of view, although 650,000,000 tons may be produced in 1917, its effectiveness as compared with previous years is probably about seven-eighths of this, and equivalent to a production of normally prepared coal of about 570,000,000 tons. We have, then, instead of an increased production as compared with last year, an actual decrease of effective coal of about 30,000,000 tons. If this is added to the estimated increased needs, due to our accelerated activities, of 100,000,000 tons, we have a deficiency of the equivalent of 130,000,000 tons, instead of 50,000,000 tons to make up by good engineering and true fuel conservation in the boiler room.

SUPPLIES FOR AN ARMY OF ONE MILLION

The amount of freight transportation involved in furnishing supplies to an army of 1,000,000 men is described in a paper read before the war class of Columbia University

recently by Major Robert E. Shannon of the United States Army Quartermaster's Corps.

"For an army of one million men," he stated, "based on the regular United States garrison ration, it will be necessary to transport 26,700,000 lb. of beef or its equivalent in substitutive articles of the ration, per month; 6,750,000 lb. of bacon, 26,700,000 lb. of flour, 37,500,000 lb. of potatoes, 4,500,000 lb. of beans, 2,093,000 lb. of coffee and 6,000,000 lb. of sugar, or if we consider all the articles that go to make up the ration, to transport food alone for an army of 1,000,000 men, for one month, will require tonnage for 146,000,000 lb.—and to feed the horses and mules of this army of 1,000,000 will require the transportation of nearly 260,000,000 lb. of forage per month. When we consider the matter of clothing, to keep this army properly clothed, will require in round figures, per month, 300,000 pairs of breeches, 300,000 overalls, 300,000 shirts, 400,000 pairs of shoes, and 250,000 suits of underwear, to say nothing of the coats, overcoats, rubber boots, blankets, socks, hats and other articles that go to make the clothing allowance of the soldier."

EXPORTS OF RAILROAD EQUIPMENT IN OCTOBER.—The principal articles of railroad equipment exported from the port of New York during October, 1917, according to a bulletin of the National City Bank of New York, were steam locomotives valued at \$3,463,336; steel rails, at \$1,278,021; freight cars at \$785,783; and railroad spikes, at \$227,592.

ENGLAND ENCOURAGES TRUCK TRANSPORTATION.—In view of the shortage of petrol and the necessity of relieving the traffic on railways, it has become necessary that all privately owned lorries and steam trucks should be utilized to their fullest carrying capacity, and accordingly the transport section of the Ministry of Munitions has arranged a scheme of mechanical transport control to cover the West Riding of Yorkshire, which began operation on November 12. The object of the scheme is to provide loads for empty journeys that lorries are at present running and loads for lorries not fully employed within a radius of 20 miles of loading point.



Photo by Central News Photo Service.

Locomotives for the British Forces in Mesopotamia, Being Conveyed up the Tigris River, on a Barge.

Fuel Records on the Baltimore & Ohio*

Methods for Following the Individual Performance of Locomotives on a Road Having a Divisional Organization

By W. L. Robinson

Supervisor Fuel Consumption, Baltimore & Ohio

FUEL economy has now assumed an even greater degree of importance than it has ordinarily held. The United States Chamber of Commerce, co-operating with the Council of National Defense, he said: "Coal is the sinew of war, and he who unnecessarily reduces the country's available stock of coal may curtail the nation's energies in the great industrial conflict." A successful war implies supremacy in the industries on which it is based, and coal is the very root and foundation of war-time industry. Every pound that can be obtained is urgently needed for domestic and manufacturing purposes, for making munitions, for steam vessels and for railways; all directly or indirectly necessary to carry on and win the war.

Fuel economy has long been considered a mechanical problem and little supervision has been given the subject on many roads by officers other than those of this department. Recently, however, a more general recognition of this as a transportation problem has been noted, particularly in the meetings of the International Railway Fuel Association. The sooner all departments of a railway recognize their relation to fuel consumption, the sooner will progress be made in reducing admitted wastage, for fuel losses occur at all stages from purchase, inspection, distribution and utilization, right down to cleaning fire on the ash track. The largest losses, however, occur under the jurisdiction of the mechanical and transportation departments.

The human element is a large factor in fuel economy. A man will react to his environment, and where a commodity like coal is handled as if it were sand, ballast or dirt, and in such large quantities, he will come to consider economy of small importance. This is very well illustrated by the difference in handling wage and fuel accounts; every care and check is thrown around wage accounting, while on most roads the basis of fuel accounting originates with the lowly coal dock man, and fuel accounting finally becomes a matter of adjustments. Any scheme for fuel economy must aim to overcome this condition, to bring about a realization of the actual dollars and cents value of coal, both by the men and by the officers.

For the purpose of familiarizing and educating all concerned regarding the value of fuel, the Baltimore & Ohio distributes monthly statements, both in tabulated and graphic form, showing the total consumption and consumption on an amount-of-work basis. This information is sent to all executive and operating, and to division staff officers.

These statements show the performance of locomotives in freight and passenger service by months and by divisions, with totals for the entire road; the amount of fuel used on the entire system by months; the total cost of the fuel distributed by months; and the average cost of fuel per ton by months. On the fuel performance statement each division is rated according to the percentage increase in gross ton-miles per ton of coal over the same month of last year, in freight service, and the percentage decrease in pounds of coal per car-miles over the same month last year, in passenger service. These statements also show cost of the fuel saved or lost for each division. The chart showing the average cost of fuel per ton by months is particularly interesting. There has been a gradual increase in this cost from a little less than one

dollar per ton in June, 1916, to \$2.40 per ton in August, 1917, or an increase of 140 per cent.

Active interest shown by supervision and an intelligent use of reports is an unfailing method for securing co-operation in matters affecting fuel economy. This is illustrated in the case of a superintendent who reduced his percentage of locomotives with leaking packings, valves out of tram, and poor steaming qualities to an almost negligible amount, by the simple procedure of giving his master mechanic periodically a list of defective locomotives taken from regular reports and asking to be informed as soon as the repairs were made.

Standardized methods of firing and operating locomotives with systematic instructions are necessary accompaniments of fuel economy. The Baltimore & Ohio has issued a text book for engineers and firemen on locomotive management, called "Good Firing." This book contains instructions which will help the fireman in properly firing the locomotives. Enough of the scientific theory of good firing is given so that the fireman may have a rudimentary idea of what he is trying to accomplish and what it means. In addition to this there are instructions to engineers, fuel standards, instructions for the operation of locomotives equipped with superheaters, brick arches and stokers.

The use of the wrong kind of coal, improper preparation and sizing, have a very detrimental effect on fuel economy, as was clearly demonstrated by recent laboratory tests made at the University of Illinois.† The effect of proper sizing is not fully appreciated, or if so, is not given the consideration its importance demands. In the tests just referred to a variation in sizing from 1¼-in. screenings to 2-in. lump resulted in an increase in evaporation of 17½ per cent. The same consideration should be given to physical characteristics as to B. t. u. value and length of haul, by those to whom the purchase of railway fuel is intrusted, to obtain the maximum efficiency from the use of coal on grates. The full realization of extended application of apparatus for burning fuel in pulverized form, now so promising, should, however, remove eventually any necessity for considering the sizing.

Poor coal is a formula used to cover a multitude of real sources of inefficiency, but no matter how much it is abused, the fact remains that we do have poor coal which results in a waste of transportation facilities, a waste of fuel, time and money; it causes delays and failures. At present above all others, poor coal is a crying indictment against the coal producers, as it can only have one result—a slackening in the intensive manufacturing production demanded by war necessities. Coal producers can largely remove this industrial impediment by pooling their interests, and then concentrating the labor and energies during the war on mines producing satisfactory fuel. By concentrating for the period of the war on the mines capable of producing the best coal, greater efficiency should be forthcoming due to ability to haul more heat units per cubic foot of coal car carrying capacity, lessened amount of mine labor required and lessened amount of switching.

FUEL ECONOMY RECORDS

It is obvious that before any systematic improvement can be made in reducing fuel consumption, the particular sources

*Abstract of a paper presented at the December meeting of the New England Railroad Club.

†See *Railway Age Gazette*, July 13, 1917, page 51.

among the men to attain a good fuel performance by publishing their average standing monthly.

With the total fuel consumption, both actual and standard, known and placed on Form 2520 (Fig. 1), the remaining fuel data for each trip (total costs, pounds of coal per 100-ton-mile, cost per 100-ton-mile and fuel performance) are quickly obtained by use of the slide rule. This completes the work on Form 2520, and a summary is next made on Form 1598 (Fig. 3) showing the total fuel costs by the day by classes of service, or such other headings as may be desired for general statistical purposes, and for making divi-

fuel waste appears to have been due to mechanical defects, he ascertains if it has been shown on the work reports and if the repairs have been made. This is beneficial because the crews soon learn that constant supervision is exercised and that every poor fuel performance is noted, and further, because during every month each road foreman has instructed anywhere from 15 to 30 crews in matters affecting fuel economy. It is the slow, conscientious, individual work of this character that achieves beneficial results which are lasting.

Superintendents are busy men, and are more vitally inter-

BALTIMORE AND OHIO RAILROAD COMPANY.

Form 1598 A-17

Use of Engines and Trainmen for Philadelphia Division for 24 hours ended 11.59 P. M. October 7 1917

TIME CONSUMED			WAGES OF ENGINE AND TRAIN CREWS, INC. OVERTIME					WAGE COST PER 100 TON MILES		Wage Performance %	POUNDS FUEL CONSUMED				FUEL EXPENSE				Fuel Performance %	Wage and Fuel Performance %	REMARKS		
Eng.	Trn.	Total	Road Crews	Helper Crews	Relief Crews	Misc.	Total	Actual	Standard		TOTAL		PER 100 TON MILES		Totals in Dollars		Cigar per 100 Ton Miles						
Actual	Standard									Actual	Standard	Actual	Standard	Actual	Standard	Actual	Standard						
5.7	.5	9.5	2094	260			2354	330	2024	137	122	89.3	160	172	930	1800	1840	1820	107	115	107	97.0	
4.4	.5	11.7	2047	260			3307	1016	2291	210	139	66.3	160	172	1010	1080	1840	1770	116	124	107	87	
6.9	.5	14.3	3682	260			3942	1651	2291	250	112	44.9	160	166	1020	1050	1840	1900	117	121	103	84	

and Gives Detailed Information Regarding Fuel Consumption for Each Trip

sional and period comparisons. This form also shows the total transportation wage costs for the same headings, and is a daily unobtrusive visitor to the desk of each superintendent, reminding him where any efforts to reduce transportation costs will be most amply rewarded.

A study is next made by the fuel clerk of the individual runs on Form 2520 (Fig. 1), and men with the poorest performance are selected as meriting the attention of the road foreman of engines. It was felt that a road foreman of en-

ested in the kind of a fuel performance their division is making than in what any particular men are making, and for their benefit Form 1509-F (Fig. 4) is next compiled by the fuel clerk from Form 2520 (Fig. 1). Fig. 4 shows the total fuel cost and consumption, both actual and standard, for the day, also the unit consumption actual and standard for the day, accumulative average for the month and for the same period one year previous. This form shows at a glance the divisional fuel performance for the day, whether

2031-5-2-18.

Form 1598-B Rev.

BALTIMORE & OHIO RAILROAD COMPANY

DAILY SUMMARY OF FREIGHT TRAIN PERFORMANCE

24 HOURS ENDED 11.59 P. M. September 6, 1917 191

Chicago DIVISION

Direction	Train Miles	ACTUAL TON MILES IN HUNDREDS		TOTAL TIME CONSUMED		Total Overtime Expense in Dollars	TOTAL ACTUAL WAGE EXPENSE INCLUDING OVERTIME IN DOLLARS					Total Standard and Wage Expense in Dollars	TOTAL FUEL EXPENSE IN DOLLARS		TOTAL WAGE & FUEL EXPENSE IN DOLLARS		REMARKS
		Handled	Standard	On Road	Total Crew Time		Road Crew	Helper Crew	Relief Crew	Miscellaneous	Total		Actual	Standard	Actual	Standard	
QUICK DISPATCH																	
EAST	955	13,797	15,405	44.4	59.0	2	192	-	-	-	192	190	293	264	485	454	
WEST	537	7,965	9,605	22.9	28.0	-	107	-	-	-	107	107	170	154	277	261	
TOTAL	1492	21,762	25,010	67.3	87.0	2	299	-	-	-	299	297	463	418	762	715	

Fig. 3—Summary Expense Sheet for the Superintendent by Classes of Service. The Information Is Taken from Fig. 1

gines could not well handle more than one such case, on an average, per day, hence one card, is filled out for each road foreman of engines, showing in detail all information regarding the worst runs made during the day. The cards are small—3 in. by 5 in.—and easily carried in the pocket. The practice is not to call in any man or to cause any antagonism by censure or discipline; but in his daily trips about the division, as he gets on an engine, the road foreman, if he has received a card regarding that particular crew, refreshes his memory from it, and questions or instructs them with a view of correcting the causes of their poor fuel performance. Or he may make it a special point to ride with and instruct the crews so reported. In any event, where the cause of the

it is good or bad, and whether it is getting better or worse. If unsatisfactory, Form 2520 (Fig. 1) will show all the details as to cause and where corrective measures may be applied.

BULLETIN BOARDS

The other feature employed by the use of the fuel standards to attain economy in the use of fuel is the normal desire of the average man to lead in any sport or work involving competition. This is accomplished by publishing on the bulletin boards every month a list of all engineers and firemen on the division ranked in the order of their average fuel performance for that month. This is obtained by keeping

No attempt has been made in inaugurating these fuel standards to separate the fuel consumed at the terminals from that consumed on the road. The error involved in charging the record with the terminal fuel consumption is negligible because the error is practically a constant one, applying to all crews alike, and will not affect the relative standing on which their ratings are based. The ton-mile unit was used in preference to the car-mile unit, on account of the variations existing in car weights.

Fuel standards were originally expressed in pounds of coal per hundred-ton-miles, but these were soon discarded in favor of pounds of coal per trip. Practical use quickly developed the fact that for any given run the total coal used on a trip did not vary greatly, regardless of the tonnage, while, due to the same reason, the pounds of coal per ton mile varied almost directly as the tonnage; thus, to avoid having an excessive number of fuel standards for each run, the standard was made total pounds per trip. Otherwise the engineer was penalized each time he hauled lighter tonnage than average, and it is a measure of his efficiency we are after rather than that of train loading.

The general scheme of fuel records as described covers

that they can be used at the current time, is of more importance in connection with the latter than any fine degree of accuracy.

The success of the methods followed is evidenced by a decreasing or nearly stationary total fuel consumption, against a continually increasing total tonnage handled, as shown in the table. With the tonnage increasing 40.7 per cent the fuel consumption increased only 7.3 per cent. The comparisons are made against the fiscal year ending June 30, 1911, due to the fact that the present organized effort to effect fuel economy was not instituted until the latter part of that fiscal year. The increased size of locomotives, the use of superheaters, changed conditions of fuel and firing by introduction of stoker locomotives, as well as the following up of fuel consumption, have had a bearing on holding down or increasing the consumption, and it is probably not possible to determine definitely the relative values of the various causes.

DISCUSSION.

Henry Bartlett, chief mechanical engineer of the Boston & Maine, called attention to the necessity for everybody co-

THE BALTIMORE & OHIO RAILROAD COMPANY.									
TIME REPORT OF ENGINEERS AND FIREMEN.									
From	<i>Baltimore</i>	To	<i>Brunswick</i>	Date	<i>Oct 12</i>	1917			
Conductor	<i>R. Hooley</i>	Engine No.	<i>4840</i>	Train No.	<i>XW</i>	Sec. No.			
Conductor		Engine No.		Train No.		Sec. No.			
Engineer	<i>J. F. Johnson</i>	Time Reported for Duty	<i>8:10 A.M.</i>	Time Relieved	<i>7:10 P.M.</i>				
Fireman	<i>R. Jones</i>		<i>8:10 A.M.</i>		<i>7:10 P.M.</i>				
Fireman									
Time Fixed to Leave Terminal	<i>8:30 A.M.</i>	Date	<i>Oct 12</i>	1917	Correct:	<i>G.R.S.</i>			
Time Left Terminal	<i>9:45 A.M.</i>		"	1917					
Time Arrived At Terminal	<i>5:27 P.M.</i>		"	1917	Correct:				
Time Arrived At Ash Pit	<i>6:55 P.M.</i>		"	1917					
Class of Service	<i>Freight</i>	Time Claimed	<i>8</i>	Overtime Claimed	<i>3</i>				
(over)									

THE BALTIMORE & OHIO RAILROAD COMPANY.		
ENGINEERS' FUEL REPORT FOR TRIP.		
Engine No.	<i>4840</i>	Train <i>XW</i> Date <i>Oct 12</i> 1917
Time Left	<i>8:10 A.</i>	Time Arrived <i>7:10 P.</i> Service <i>Freight</i>
From	<i>Baltimore</i>	To <i>Brunswick</i>
Engineer	<i>J. F. Johnson</i>	
Fireman	<i>R. Jones</i>	
	POUNDS COAL	
	A	B
Out of Tender when Receiving Eng.	<i>4,000</i>	
Coal Taken at <i>Rule Mill</i>	<i>20,000</i>	
" " "		
" " "		
Out of Tender when Relieved	<i>8,000</i>	
Total Actual Amount Used on Trip	<i>24,000</i>	
Standard Allowance for Trip	<i>17,700</i>	

Fig. 6—Fuel Record Made Out by the Engineer

the subject from two different viewpoints; one, that of pointing out periodically the results obtained, but representing the past which cannot be changed and serving more as a guide

RELATION BETWEEN FUEL CONSUMPTION AND TONNAGE HAULED
COMPARISONS BASED ON STATISTICS FOR FISCAL YEAR 1911

Fiscal year ending June 30	Variations in total tons locomotive fuel consumption		Per cent of increase in net tons one mile	Per cent of increase in gr. revenue
	Per cent increase	Per cent decrease		
System 1912.....	...	5.1	6.4	5.0
1913.....	2.2	...	21.1	15.2
1914.....	3.0	...	12.9	12.5
1915.....	...	7.3	9.3	4.2
1916.....	...	0.1	33.3	26.7
1917.....	7.3	...	40.7	39.0
Cumb. Div. 1912.....	...	6.5	5.6	...
1913.....	2.9	...	17.3	...
1914.....	...	3.3	10.9	...
1915.....	...	12.9	5.9	...
1916.....	...	5.3	32.3	...
1917.....	...	5.3	39.4	...

for the future; the other, that giving information which can be promptly used in correcting specific irregularities as they develop. The problem of getting these records available, so

operating in the matter of saving fuel. As chairman of a committee appointed to investigate the fuel situation on the Boston & Maine, he found that the engine crews were not the only ones to be educated in the matter of fuel economy. Much depends upon the way the fuel is handled at the coaling stations, on the maintenance of the power, and in the handling of trains by the transportation department.

J. T. Anthony, assistant to the president of the American Arch Company, called particular attention to the necessity of proper supervision in the matter of fuel economy. Fuel-saving devices can be applied to locomotives, but unless the men are instructed properly regarding their use and maintenance, these devices will not fully serve their purpose. Considerable benefit will be obtained by giving the men reading matter on the subject of fuel consumption, with instructions as to how to use it. In view of the general fuel situation it is no longer a question of saving money, but of saving coal.

S. Bisbee, fuel supervisor of the Boston & Albany, favored the competitive method of handling the locomotive fuel problem. In order to obtain the best results from the individual performance sheets, it is very desirable to issue the information promptly. The engine crews should be thoroughly instructed in the principles of proper fuel combustion, and

the fact that air is as necessary as heat for the burning of the coal should be impressed strongly on their minds.

G. E. Ryder, of the Locomotive Superheater Company, called attention to the waste in fuel at terminals and on the road, due to the delays caused by poor despatching. While the engineers and firemen can save a lot of coal by properly handling their locomotives, these other sources of fuel waste should not be overlooked.

C. B. Smith, mechanical engineer of the Boston & Maine, spoke of the necessity of watching the power plant operation. With the price of coal as high as it is at the present time it would undoubtedly be economical to provide the more important power plants with meters and recorders of one kind or another, so that the performance of the power plant may be watched more carefully.

Other speakers called attention to the fact that neither the firemen nor the fuel obtained at the present time are as good as they were. The fuel has been found to be of a much poorer grade than the roads have ever had. The mines are not properly preparing the coal, and under the present fuel priority orders the railroads are getting the poor coal. The

WORK TO RELIEVE CONGESTION

The General Operating Committee of the Eastern Railroads, with headquarters at Pittsburgh, continues to make progress in its work of relieving congestion in the Eastern lines. An important part of its work has been to co-operate with the United States Fuel Administration in promoting movement of coal. As the Fuel Administration and the railroads have agreed that the most practicable plan is to arrange for the pooling of all coal cars at the assembling yards nearest to the mines where it originates and at the principal centers of distribution nearest to the areas of maximum consumption, F. C. Baird has been appointed representative of the committee to arrange through the sub-committees at Cincinnati, Columbus, Indianapolis and Detroit for such primary pools as may be necessary to furnish the immediate relief demanded to meet the coal situation in Michigan. Similar action had previously been taken as to the Ohio situation.

An order was issued to all railroads to analyze immediately the railroad fuel situation on their lines and reduce orders to current requirements and they were also directed wherever practicable to consume the fuel from reserve sections until the present situation is relieved.

Another action of the committee was to attempt to avoid the use of unreasonably circuitous routes which involve the performance of unnecessary ton mile haulage at a time when the railroad facilities are taxed to the utmost and relief is necessary in order to handle essentials. For this purpose the sub-committees were called upon to give attention to the subject at once for the purpose of developing the existence of unreasonably circuitous routes and to make the necessary diversions to such more direct routes as are open.

On December 11, the committee instructed the placing of an embargo by all lines reaching the North Atlantic seaboard ports on all export freight except for the United States government. No permits are to be issued except by specific authority of the committee's export division. This amplification of the embargo placed at the first meeting of the committee was taken on receipt of information that approximately 15,000 cars of export freight were being held under load at the North Atlantic ports and on the lines. An embargo was also ordered on the loading of all slag and refuse except for commercial shipment with the provision that from iron and steel industries non-self-contained the local sub-committees may issue permits for modification of this embargo.

No fast freight trains are to be run; all freight must be handled in full tonnage trains. It has been decided that fifth morning delivery should be the correct basis for movement between Chicago and New York. Empty refrigerators must be returned on full tonnage continuous movement trains though so far as practicable they should be run in solid trains.

Because of the increasing burden of the tracing of carload and less than carload freight in spite of the fact that priority orders now cover the more important shipments, the committee ordered that persons engaged in tracing be prohibited from entering the premises of railroads except at designated offices where tracing work is concentrated and that tracing by telegram, telephone, mail or orally be prohibited until after freight has had reasonable time to reach destination. Special instructions to expedite the movement of certain traffic, other than the priority or preference orders, must be given only in extreme cases.

The committee requested the Railroads' War Board to instruct its accounting committee to prepare for adoption a uniform card revenue waybill, to be used by all railroads, to include all information required for a strict compliance with Car Service Commission Order No. 5 and so constructed as to afford protection during the continuous handling to which these cards are subjected.

Form 1000 Rev. 1918. Month... 10... Report No. 28...
THE BALTIMORE & OHIO RAILROAD CO.
 ROAD FOREMAN'S REPORT.
 Date... 10-24-1917.
 1. Road engine... 2431... Train... 44... To... To... Miles... 60...
 Loads... 54... Empty... Gross Actual Tons... 7000...
 Engineer... Fireman...

MECHANICAL FEATURES		REMARKS	
Piston Rod Pack's	✓	✓	Right packing
Valve Rod Pack's	✓	✓	Right packing
Gauge Cocks	✓	✓	Right packing
Water Glass	✓	✓	Right packing
Injectors	✓	✓	Right packing
Blow Off Cocks	✓	✓	Right packing
Blow Off Hinges	✓	✓	Right packing
Steam Leaks	✓	✓	Right packing
Smoker Box	✓	✓	Right packing
Fire Box	✓	✓	Right packing
Flues	✓	✓	Right packing
Grates & Riggers	✓	✓	Right packing
Ash Pan	✓	✓	Right packing
Brick Arch	✓	✓	Right packing
Superheater	✓	✓	Right packing
Stack	✓	✓	Right packing
Throttle	✓	✓	Right packing
Valves	✓	✓	Right packing
Valve Motion	✓	✓	Right packing
Cyl'd Packing	✓	✓	Right packing
Crossheads	✓	✓	Right packing
Main Rods	✓	✓	Right packing
Slide Rods	✓	✓	Right packing
Driving Beams	✓	✓	Right packing
Wheels	✓	✓	Right packing
Trucks	✓	✓	Right packing
Safety Appl's	✓	✓	Right packing
Air Brakes	✓	✓	Right packing
Tools	✓	✓	Right packing
Speed Indicator	✓	✓	Right packing
Loc Motions	✓	✓	Right packing
Between Engine and Tank	✓	✓	Right packing

Coal Consumed { Engineer's Est. 8000 lbs.
 while on Locomotive { By " 8000 lbs.

REMARKS
 Good performance by
 Engine crew
 Engine light on coal

B. E. R. F.

Fig. 7—Road Foreman of Engines Trip Report

engineers can do a lot for fuel economy in the manner in which they handle their power.

In closing the paper Mr. Robinson called attention to the fact that there are several mines being opened up, in view of the extreme coal shortage, which previously had been abandoned, due to the fact that the coal was not of a sufficiently good grade to warrant their being operated. This very inferior grade of coal is finding its way to the market and is causing a lot of trouble. It would be far better to close up these mines and use the transportation facilities and the miners at mines from which the good coal can be procured and where there is a shortage of labor and cars. Due to the very great demand for fuel, the mines are not properly cleaning the coal.

He called particular attention to the fact that fuel is a transportation problem and that the superintendent who is always striving to reduce the cost of operation on his division should watch the fuel bill as carefully as anything else.

On the Baltimore & Ohio 70 per cent of all the fuel purchased is used in freight service, 10 per cent in switch service, 12 per cent in passenger service, and 8 per cent for all other uses, including the power plants. It costs the B. & O. 0.45 cents per ton of coal used to maintain the records of the fuel department.

State Commissioners Before Newlands Committee

Hearings Begun at Washington December 11
Continued This Week; State Authority Defended

CARL D. JACKSON, chairman of the Wisconsin Railroad Commission, on December 12 continued his testimony, reported in part in last week's issue, describing the work of the Wisconsin Commission for the purpose of showing that exclusive federal regulation, as proposed by the railroad, is unnecessary: "If state regulation is to be done away with," he said, "something just as effective must be substituted for it," and he doubted whether the plan of regional federal commissions would be as beneficial to the public and to the railroads as effective state regulation because he thought they would not be so familiar with local conditions.

He admitted that deplorable conflicts between state and interstate rates have arisen, although not in Wisconsin, he said, and that they should not be permitted, but he thought that the courts and the Interstate Commerce Commission have sufficient authority to correct them. For the purpose of avoiding such conflicts he favored the plan recommended by the Interstate Commerce Commission in its annual report, and endorsed at the recent convention of the National Association of Railway and Utilities Commissioners, that the federal commission, without any abdication of federal authority, be expressly authorized by law to co-operate with state commissions in efforts to reconcile upon a single record the conflicts between the state and interstate rates. A proposed bill to carry out the provisions of this recommendation is being prepared by a committee representing the Interstate Commerce Commission and the state commissioners.

In reply to questions asked by Representative Sims, Mr. Jackson said that the policy of forcing railroads to compete, which Congress has followed for 30 years, has been a mistaken one. "I do not think the competitive system is a success," he said, "but that co-operation and co-ordination should be encouraged, and I am not speaking with reference only to war conditions. The competitive system has not brought about good results. It has resulted in unnecessary duplication of facilities and has caused unnecessary expenses. The Interstate Commerce Commission should have power to prevent needless duplication."

Major S. W. Brookhart, of Washington, Iowa, an advocate of government ownership of railroads, testified on December 14, continuing a statement he had begun at a hearing on December 9, last year. Major Brookhart said he had formerly urged government ownership as a policy for peace times on the ground that it would save \$500,000,000 a year because the government can borrow capital at lower interest rates than private corporations, \$300,000,000 in increased value of real estate each year and \$400,000,000 by eliminating the waste of competition, a total of \$1,200,000,000 a year. In time of war, he thought this saving would be increased on the ground that the government can still borrow more cheaply than others, and because the increase in real estate values and in the amount of waste is greater during time of war. "In addition," he said, "war has brought about a crisis which private ownership can never meet. I believe the government will take over the operation of the railroads before the grass grows green, if not before the new year, and that they will never again be surrendered to their owners."

Major Brookhart said he thought a fair way to determine the value of the roads would be to take the average market price of their securities over a period of years, which would probably amount to about \$15,000,000,000.

As an argument for government ownership, Major Brook-

hart contended that both freight rates and passenger rates in this country are the highest in the world. He also said that the government could borrow capital at an interest rate about 1.75 per cent less than what private corporations would have to pay. He described the plan adopted in Great Britain upon its entrance into the war, by which the government took over the control of the roads and guaranteed the net earnings of 1913, but pays no freight rates. The expenses of the railroads are paid from their receipts from commercial traffic, and if a railroad earns more than during the pre-war year it is ordered to pay over the surplus to some railroad whose earnings have been reduced. This plan has been successful, he said, and instead of politics having entered into the railroad management it has been left entirely in the hands of railroad officers.

Charles E. Elmquist, formerly a member of the Minnesota commission and now Washington representative of the National Association of Railway and Utilities Commissioners, indicated that the state commissions are opposed to any plan of government control of railroad operations which would deprive the state commissions of their powers.

"If the state commissions are legislated out of existence," he said, "the only representative the public would have would be the counsel for large corporations, unless some authority were created for the purpose. The state commissions perform important functions as the agents of the shippers of interstate commerce as well as their regulatory functions. If the government takes over the railroads during the war it should only be done by utilizing the organization and experience of the state commissions."

Asked whether the public would be as well served by the creation of regional commissions, subordinate to the Interstate commission, as proposed by the railroads, Mr. Elmquist said that would depend upon the extent of their territorial jurisdiction and whether the commissioners were appointed from the territory or from outside. It would be possible to select commissioners from the territory who would be familiar with local conditions, but if the territory were made too large the plan would defeat its purpose, he said.

Ira B. Mills, chairman of the Minnesota Railroad and Warehouse Commission, described its work to show that it keeps in close touch with local conditions and is able to handle local matters more promptly and informally than would be possible for a commission at Washington. At one time, he said, he had advocated a centralized plan such as that now favored by the roads, but he had come to the conclusion that the state commissions are almost indispensable. He thought the Interstate Commerce Commission would be more successful if local matters could be handled locally with the right of appeal to the commission at Washington.

J. F. Shaughnessy, of the Nevada Railroad Commission, read a long statement criticising the attitude of the railroads and of the Interstate Commerce Commission in their handling of the transcontinental freight rate controversy, and he urged that Congress take the matter out of the hands of the Interstate Commerce Commission by enacting a rigid long and short haul clause to prevent railroads making lower rates to points where water competition exists than to the intermediate points. Mr. Mills had previously told the committee that a rigid long and short haul rule would not work as applied to interstate traffic.

Senator Cummins asked Mr. Shaughnessy whether he would have Congress follow the idea to its logical conclusion

and adopt the principle that all rates should be made on a mileage basis. Mr. Shaughnessy said he would not, because such a plan would interfere with other rates in which the intermountain country is interested, such as the blanket rates to points east of Denver on products of the soil.

Mr. Shaughnessy also criticised decisions of the Interstate Commerce Commission fixing passenger rates which had taken into consideration increases in the weight and cost of passenger trains. Railroad passenger service is conducted in this country in a too extravagant way, he said. "The railroads have followed the policy of using their passenger service as an advertising medium, and have therefore furnished a service superior to what has been needed. They are using heavy all-steel cars which require heavy track and heavy engines for their interstate travel which are only incidentally of benefit to the local traveler, and they are hauling around 10 tons of dead weight for each passenger. This is not necessary, and will drive the local passenger to using electric railways or automobiles. The weight of trains should be cut in two by using wood instead of steel, and the traveling public should be given the benefit of the reduction in fares."

Mr. Shaughnessy was using this as an argument against giving the Interstate Commerce Commission exclusive jurisdiction over rate regulation because he said the commission had fixed passenger fares with reference to interstate traffic conditions. Representative Esch pointed out that the Interstate Commerce Commission had repeatedly recommended legislation to require the use of steel cars on the ground of safety.

ENGINEERS PRAISED BY FIELD MARSHAL HAIG

Field Marshal Haig, commander of the British forces in France, has expressed to Gen. Pershing in a letter his thanks for the assistance given by men of the Eleventh Engineers around Gouzeaucourt on November 30. The Field Marshal's letter follows:

"General Headquarters British Armies in France, Dec. 6, 1917.—My Dear General Pershing: I have much pleasure in forwarding herewith for your information a copy of a report submitted to me by General Byng, commanding the Third British Army, on the gallant conduct of companies of railway engineers of the United States Army in and near Gouzeaucourt on the 30th of November.

"I desire to express to you my thanks and those of the British forces engaged for the prompt and valuable assistance rendered, and I trust that you will be good enough to convey to these gallant men how much we all appreciate their prompt and soldierly readiness to assist in what was for a time a difficult situation.

"I much regret the losses suffered by these companies."

17 ENGINEERS KILLED OR CAPTURED

General Pershing on Sunday sent to the War Department a casualty list in which appeared the names of 17 American army engineers recorded as missing as a result of the action of November 30 last. The report did not say whether these men were killed or whether they had been taken prisoners by the Germans. Nor did it say where they were "missed," but in view of the known fact that it was on November 30 that a large number of army engineers got into the action at Cambrai in the German counter attack on General Byng's army, it is reasonably certain that it was there these men were taken or killed.

Fifteen days having elapsed without any of the missing engineers reporting for duty, General Pershing has listed them as missing in action. Previously he had reported fifteen engineers of the same unit, mostly New York men, as having been severely wounded in the same action.

The casualty list of 17 "missing in action" is made up entirely of engineers. It includes one sergeant, one corporal and 15 privates, nearly all of whom were from New York or the neighborhood of that city.

SOME LETTERS FROM THE 13TH ENGINEERS

A number of interesting letters have recently been received from members of the 13th Engineers Railways, United States army, who are now in active service in France. The following excerpts were taken from a letter written by First Lieutenant G. C. Kennedy, now in charge of Company F, "somewhere in France":

"Where our camp now is was two years ago a peaceful farm, but it is now a large terminal yard, feeding the greatest of fronts in the present war. * * * Of the war, I must say that we have it always with us in the hundreds of trains we handle loaded with war supplies, etc., as well as the roar of the big guns in the not so far distance—all the time calling us to hurry.

"To our right, not half a block away, is one of the largest French base hospitals, where all the time are hundreds of suffering patients. And here daily many wonderful operations are performed. Men with half their faces shot away are given new faces and in a few weeks are again sent away to fight for France—very wonderful skill, that of the French surgeons.

"Right at our back door we have a beautiful and quiet resting place, where are buried men of every nation, even to our own. John E. Newlin, an American ambulance man, and a former Princeton student, is buried here, and on his cross is written 'Died for France.'

"We have been having the regular rainy season now for over a month. It is sure becoming very cold, and, even worse, it has caused our bombproof caves to fall in. Heaven only knows what we will do when the all too friendly Mr. Boche comes over again."

"THIS LIFE IS SURE EXCITING"

E. P. Dudley, formerly a despatcher on the Atchison, Topeka & Santa Fe at La Junta, Colo., and now a member of Company F of the Thirteenth Engineers, wrote in part as follows:

"We have 48 carded trains each way every day. About 7 miles is double track, and the balance of the 65 miles is single track. We are living in barracks here, in a little valley hidden between large hills. I have not yet found out that we are hidden any, as the Germans seem to know all about us—judging from the way they treat us. We have a large terminal here with many engines.

"We have beautified the countryside with long deep trenches, built at a convenient distance to our quarters. It is very necessary that we can make our way there in the dark, as we hunt them many times during the night, especially during the past two weeks when the moon has been full. Heinie comes over every night and throws apples at us, and the apples burst all over you if you are not in a trench. We get the signal from the lookout ballons on the hill that he is coming, and then we make a marathon for the ditch. I did not have my clothes off for four days last week, but I am an artist now at dodging the apples. They sure muss up the country.

"This life is sure exciting. I was on the road doing special work, and was at a certain town on the road when they shelled it. I lay on my stomach in a ditch for five hours. It was sure fun, with duck hunting as nothing in comparison."

ALMOST NEVER A "BAD ORDER"

Sergeant L. L. Trager, in a letter written on October 15, gives some interesting details concerning French railroad equipment and operating methods:

"The stations are close together and the track is in the very best condition, with never an engine failure. The

trains always reach their destinations on time. This is made possible by small trains, easy schedules and careful trainmen. There being no competition, it is not necessary to burn the wind to make the trip quicker than the other fellow. Munitions, etc., are started in plenty of time, so that there need be no cause to rush. Small trains and plenty of them, 35 to 50 (sometimes 60) cars—but not American cars. The gross tonnage per car will average about 20. Cars weigh 7 to 10 tons and generally load about 8 to 15 tons. Some of them have a load limit of 10 tons. They are queer-looking cracker boxes, with one pair of trucks under each end, and the wheels are not solid. They have spokes, so to speak. With only four wheels they look like a buckboard. We all had a good laugh at them at first—chain and hook couplers, great large bumpers at each corner of the car. I say we laughed at them at first, but since working with them we have more respect for them. They always fulfill their mission. Almost never a 'bad order.' No hot boxes or draw-bar trouble.

"The engines are about the size of Prairie types and are real up-to-date looking. Brass bands around the boiler jackets make them look real classy, and they are kept in the pink of condition. Some of them have left-hand drives, some right. As you probably know, on double track in England and France the trains move on the left rail instead of the right. I understand there is American equipment on French soil, but I have seen none. The track in this country is in fine shape, well ballasted, heavy rail—about 85 pounds—so speaking summarily, we have a whole lot better outfit to work with than I expected."

LOCOMOTIVES BUILT IN 1861

Captain V. H. Hagelberger, of Company B, compliments the French on the condition of their locomotives, track and roadbed:

"Two weeks ago we took charge of the military railroad supplying the front lines on one of the important battle fronts in France. This is a busy line and a great many difficulties in operation that we have to familiarize ourselves with. Our track and roadbed is fine and in good condition, and we are using engines that were built as far back as 1861 which are in remarkably good condition considering their age. However, they are much better built than the locomotives in the States, as a great many of them have copper fireboxes and brass linings in the machinery. There was evidently plenty of this kind of material when these locomotives were built and it didn't cost very much. At some places we have metal ties and in nearly every instance we have screw spikes. Most of the business is carried on at night here owing to the advantages darkness would have in a locality of this kind. We are getting along first rate, working in the dark, but such is war and I am sure that we will make a go of it. In fact, the people whom we relieved consider we are doing remarkably well in the short time we have had it."

A UNIQUE COALING PLANT

The problem of the economical handling of coal at branch lines or junction points where only one or two locomotives are coaled daily is often difficult to solve. The expenditure necessary to install a modern coaling plant at such points is not warranted and often no special facilities are provided. Where locomotives are coaled directly from the cars it is not an unusual sight to see a train crew stand for half an hour or more while a gang of laborers shovels coal on the tender. At such points not only are trains delayed but the coal cars are held and a considerable number of laborers is required to handle the fuel.

An interesting installation of a small coaling station designed to overcome these objections has recently been constructed by the Georgia & Florida, Nashville, Ga. Nashville is the junction point with a branch line on which there

are two trains a day and it is also the turning point for a local freight train. Prior to the installation of the present facilities, these trains were coaled by hand directly from the cars. This made it necessary to have one or two coal cars always on hand. In designing the new plant the object was to avoid the necessity of keeping cars standing under load at the junction, to eliminate the loss of time by locomotives and crews and to reduce the labor required to a minimum. While the installation is simple and of a type that can be employed only where the amount of coal handled is small, it has given very good results at this point.

The plant at Nashville consists of an inclined spur track 300 ft. long, parallel with the main line and 32 ft. from it. At the end of the spur is a trestle 6 ft. high and 70 ft. long. The space under the trestle is floored. Near the end of the trestle is an elevator of the hand power carriage type, with a platform 6 ft. by 14 ft. The elevator has a capacity of 3,000 lb. and can be raised to the height of the coal platform beside the tracks, which is 14 ft. above the rail, 16 ft. wide and 32 ft. long.

Only one man is employed in operating this coaling sta-



Coaling Station at Nashville, Ga., Operated by One Man

tion. The coal is received in hopper bottom cars and after the cars are placed on the trestle it is dumped directly on the floor beneath. It is then loaded by hand into coal buggies which have a capacity of one ton. After the buggies are filled they are rolled onto the elevator and hoisted by hand to the level of the elevated platform. They are then placed in a position from which they can readily be dumped on the tender of the locomotive. Eight tons of coal can be placed on the platform at one time. As the coal is loaded in the buggies and in position for dumping when the train arrives, the tender can be filled by the fireman and the coal handler in three minutes.

From 18 to 20 tons of coal are handled daily at this plant. By releasing the coal cars promptly, the per diem on two cars is saved. The delays to locomotives have also been eliminated and the cost of labor has been reduced considerably. The cost of the installation including the trestle, platform and elevator, but not the coal buggies, was about \$1,600. We are indebted to E. B. Eppes, chief engineer of the Georgia & Florida Railway, for the details of this plant.

RAILROAD SHELTERS PUBLIC FROM AIR RAIDS.—The London & North Western Railway has placed at the disposal of the authorities, for use by the public at times of air raids, the twin tunnels under Primrose Hill, built, but not yet opened, for the electric railway between Chalk Farm and Queen's Park. The tunnels are about a mile in length, and will accommodate thousands of people.

Settlement of Railroad Problem Delayed

No Action on Part of President; Congress Takes Holiday Recess; Coal Situation a Troublesome Question

WASHINGTON, D. C., December 18, 1917.

APPARENTLY President Wilson is either still trying to make up his mind as to what to do with the railroad problem and intends to leave it up in the air over the holidays, or he has decided to take over the roads for operation under the direction of a government controller under the authority conferred by the law of August 29, 1916. Without any definite knowledge it had been assumed by almost everyone in Washington in touch with the question that the President had decided to take over the railroads, and that he would make the announcement in a message to Congress recommending the necessary legislation; but Congress took a holiday recess on December 18 until January 3 without having received any word on the subject from the White House.

This has caused the railroad men whom the President has kept "watchfully waiting" to fear that he may soon exercise the emergency authority he already possesses to put the roads under the control of a government controller or "transportation dictator", leaving the complicated problems involved in the question as to how the companies are to be compensated for Congress to amuse itself with during the long winter afternoons. While the spectacle of Congress wrestling with the question of guaranteeing railway net earnings for the period of the dictatorship may also promise some entertainment for the spectator who has only an extraneous interest in the subject, it holds forth no pleasing prospect for the railway security holder or executive.

They recall very well that a so-called "eight-hour" law was passed, obligating them to pay out some millions of dollars a year in additional wages, and that some recommendations were made as to ways of assisting them to raise the necessary millions and as to making a recurrence of the circumstance impossible. They are reminded of the law with the recurrence of each monthly or semi-monthly pay-day, but they hear no more of the recommendations for compensating them for the expense, or for making a recurrence of the strike threat impossible.

Until Congress recessed for its holidays it had been the hope and expectation that if the President had decided to take over the roads he would ask Congress for a new law prescribing to some extent the conditions under which they should be taken and that the bargain would be made at least by the time the goods were delivered. Doubtless, the President could if he chose take over the roads under the law of August, 1916, but it was never understood that that law, comprising a single paragraph, inserted almost as an afterthought at the end of an appropriation for the National Guard, was intended for the purpose of taking over the entire railroad system of the United States. It has always been supposed, and the wording of the brief paragraph itself suggests, that it contemplated merely a commandeering of a railroad here or there for purely military purposes, for it contains not a word about compensation either of the employees or of the owners, nor does it prescribe their status in any way.

The alternative recommendation of the Interstate Commerce Commission specifically assumed, and the President is supposed to have recognized its justice, that if the government should take control of railroad operations the security holders should be guaranteed an adequate annual return while their interests were being subjected to the process of unification. Any other terms would amount to confiscation, particularly as the only reason advanced for the exercise of government control is the theory that the

railroads themselves are too greatly fettered by the constant reminder of private individual interests to be expected to succeed in unifying themselves. Unless it is proposed to do something with the railroads which would seriously affect the interests of the owners of different lines for the purpose of increasing the efficiency of the transportation system as a whole, railroad men cannot understand just what they can be expected to accomplish under the orders of a government administrator that they cannot do under the direction of the organization whose orders they have already agreed to comply with, that of the Railroads' War Board.

They have heard suggestions that with the magic wand of the President's delegated authority in one hand, while the other is occupied with printing, selling and collecting for billions of Liberty Bonds, a Cabinet officer may be expected to create 125 per cent transportation efficiency almost overnight. Fuel Administrator Garfield has allowed the impression to percolate into the public prints that with almost any kind of a government administrator for the railroads the entire problem of coal production, transportation and even unloading, cartage, distribution and prices might be solved so easily that he, too, would have an extra hand free to place at the disposal of, perhaps, the Food Administration.

Practical railroad men have heard these suggestions and are still rather curious to know how all of these simple little miracles are to be accomplished without more cars, tracks or locomotives and how the aforesaid appurtenances which they have been educated to believe are almost indispensable to the speedy transportation of freight are to be procured without some form either of cash or of credit.

After nearly two weeks of rather continuous reflection, many of them have attained a state of mind in which they are not so reluctant to be shown as they have sometimes been accused of being, but they cherish a lively curiosity as to when the demonstration is to begin and they are hoping for more action at the outset than can reasonably be anticipated from a Congressional debate. With a guarantee of net earnings patterned after the plan adopted in Great Britain, particularly if it should be based on the earnings of 1916, and with some assistance from the government in the way of priority orders for cars, locomotives and materials, it is believed that many roads would be able to finance on their own credit all of the expenditures that could reasonably be expected to be made at such a time, but if the President should seize the roads now and leave the terms for settlement by Congress at some later time, the effect on those who have thus far put up the capital to produce the transportation plant would be discouraging indeed.

It has been suggested that possibly the failure of the President to act as promptly as had been expected may be due to a growing doubt as to the desirability of such a drastic step as it has been assumed he was about to take, at least until the present plan has had a further trial, and that he may come to the conclusion that with a long, hard winter ahead, the present organization will be able to attain as near complete success as can reasonably be expected. One of the important causes to which railroad men have attributed the congestion of some of the eastern lines, the indiscriminate use of preference orders for all government freight, has recently been brought under control as the result of the agitation about it.

The watchful waiters at Washington received somewhat

of a surprise last week as to the attitude of the railroad brotherhoods toward the idea of government control. It had been rather generally assumed that because of their opposition to government ownership they would oppose the plan. It was given out that the heads of the four organizations were to call on the President last Wednesday, and the result was awaited with interest. Instead of coming themselves, however, they sent their four legislative agents who are stationed in Washington, H. E. Wills, representing the engineers; P. J. McNamara, the firemen; W. M. Clark, the conductors, and W. N. Doak, the trainmen. Their visit was brief and no announcement was made, but on the following day, A. B. Garretson, president of the Order of Railway Conductors, called at the White House and it was announced that he had stated that the brotherhoods would have no objection to make. One opinion advanced at the time was that this announcement would remove the last trace of hesitation in the President's mind as an important obstacle eliminated.

In view of the demands of the brotherhoods for higher



Stuck!

New York Tribune

wages, which their officers had already discussed with the President, and in connection with which the railroads had placed their own interests unreservedly in the hands of the President, an interesting solution of the entire wage question immediately presented itself. Aside from the interests of the railroads, already beyond their control, the idea of a tacit understanding between the brotherhoods and the President appeared quite feasible. The idea of this understanding contemplated an agreement for arbitration which might be entirely acceptable to the brotherhoods. In spite of their well-known disinclination to arbitrate they have never flatly rejected the entire principle of arbitration, and it was suggested that an arbitration as to what the recent cost of living has amounted to, following an agreement that wages should be increased by that amount when determined, might

be sufficient inducement for them to accept the control of even a government administrator with a good grace.

Such a settlement would leave open only the question as to whether the government should pay the increased wages, through the medium of guaranteed net earnings, or whether they should be met currently by higher rates. In the former case the higher wages might easily survive to present another problem after the war and after the expiration of the guarantee, a contingency which the railroads would prefer to avoid. The other alternative would follow the policy of pay-as-you-go, which is distasteful to many people.

Senator Borah of Idaho made a vigorous protest in the Senate on Monday against an adjournment without taking some action on the railroad situation. He said that at least Congress should remain in session to give the President a chance to deliver his message. There is much speculation as to who the prospective railroad administrator will be and the Washington correspondents have compiled a long list of candidates. The two most frequently mentioned are W. G. McAdoo, Secretary of the Treasury, and Franklin K. Lane, Secretary of the Interior and former Interstate Commerce Commissioner. Daniel Willard and Judge R. S. Lovett have also been mentioned because they are railroad men who are taking an active part in the government's war work, but it has been stated rather positively that no railroad man would be chosen. Others have been mentioned for the reason that they have happened to call at the White House recently and there has also been a rumor that Justice Brandeis had declined with thanks. The name of Dr. Arthur T. Hadley has also been suggested.

The Senate on December 18 adopted a resolution by Senator Cummins providing for an investigation by the Committee on Interstate Commerce for the purpose of considering the recommendations of the Interstate Commerce Commission in its special report. The committee was instructed to report legislative recommendations as soon as possible.

Senator Newlands made no objection to this resolution, saying that the President is still engaged in investigation of the question. Senator Sterling introduced a resolution, which was referred to the committee on interstate commerce, providing for the appointment of a general railroad traffic director to exercise general supervision and direction over the handling and movement of all freight trains engaged in transportation of products essential to the public welfare. In the house Representative Lenroot introduced a bill providing for the creation of the United States Equipment Corporation to acquire railroad equipment and lease it to the railroads.

COAL OPERATORS STILL AFTER PRIORITY

Not satisfied with the position accorded coal in the latest government priority order, which gives livestock, perishable freight, foodstuffs, and in some cases military supplies, precedence over coal, the National Coal Association, representing bituminous coal operators, have been trying to persuade Fuel Administrator Garfield to secure a preference order as to coal from President Wilson.

Resolutions by the directors of the association, which have been presented to Mr. Garfield, assert that in practically all coal regions there is enough labor to produce much more coal than the railroads are now moving, and that the coal operators are powerless to produce more coal until greater transportation facilities are provided.

The latest priority order, No. 5, they say, gives no additional preference in car supply to coal mines and no special priority over most other commodities, sufficient to relieve the immediate coal shortage.

The Fuel Administrator was urged to secure from the President "an order to the effect that such an immediate priority be given the movement of coal now under load as will relieve the present emergency, and that further, for the

next 30 days preference be given coal mines in the distribution of cars to the extent that may be necessary to operate all mines continuously at full capacity for the next 30 days, so as to supply at all points the amount of coal necessary to preserve the life and health of the people of this nation, and to rush with all possible speed the powder mills, cartridge mills, steel mills, and all other mills and manufacturing plants that are producing ships, guns, ammunition, food and clothing for our soldiers, and all the other supplies and equipment that are vitally essential to drive this war through to a victorious conclusion."

In an address at the Editorial Conference of the Associated Business Press last week Dr. Garfield asserted that with a government transportation administrator in office it would be a simple matter to secure such an order, but no announcement has been made that he has been able to convince the President that it should be issued.

Dr. Garfield continues to endeavor to place the blame for failure to secure the needed increase in coal production upon the railroads, asserting that the coal supply of the country is ample "if we could but solve the question of transportation."

According to the weekly report of the Geological Survey the output of bituminous coal for the week ended December 8 was 11,133,220 tons, and the nine anthracite roads originated 40,566 cars. A general easing up in the shortage of cars was reported from Illinois, Indiana, Ohio, Pennsylvania and Kentucky. In West Virginia, on the other hand, losses due to inadequate transportation were even more severe than during the preceding week. Car shortage was responsible, according to the report, for a loss of 19.6 per cent of the full time capacity.

The railroad situation in the country with particular reference to coal transportation was the subject of a conference on December 15 between United States Fuel Administrator Harry A. Garfield and A. W. Thompson, chairman of the General Operating Committee of the eastern railroads. One result of the presence in Washington of Chairman Thompson and of his recommendations was announcement of the appointment by the fuel administration of C. R. Moriarty of Cleveland as the fuel administration's representative to exercise such powers and authority as may be necessary to enable him to perform all of the duties of general director of the coal shippers' terminal pool association. Mr. Thompson reported that while the railroad committee which is working to relieve railroad congestion in the Pittsburgh terminal territory has made great progress the full effects and benefit of this will not be entirely apparent for some days.

RAILROADS NOT RESPONSIBLE FOR COAL SHORTAGE.

Fairfax Harrison, chairman of the Railroads' War Board, has authorized a statement saying that shortage of coal is due chiefly to the enormous increase in the demand for coal and to other causes, but it cannot fairly be attributed altogether to lack of transportation.

"The railroads appeal from the general statements being made upon this subject to the incontrovertible facts," he said. "The records of the railroads show not only that the coal operators have produced more coal than ever before, but that in the eight months, April to November, inclusive, the railroads have hauled and delivered 175,986 more carloads, or about 10,000,000 more tons of anthracite than in the same months of 1916. This was an increase of 15 per cent over the best record ever previously made. The records show that in the same months the railroads hauled 925,691 more carloads, or about 51,000,000 more tons of bituminous coal, than in the corresponding period of 1916. This was an increase of 18 per cent over the best record ever previously made.

"The railroads have not been able at all times to carry all the coal that could be offered to them for movement. But

has any other industry responded more efficiently to the demands created by the war than these statistics regarding coal transportation show the railroads have? And the railroads have accomplished what they have under the greatest difficulties—difficulties resulting principally from their inability to increase their plant and the excessive use of preference orders in government transportation.

"The charge has been made that the inability of the railroads promptly to move all the freight offered to them has been largely due to failure of the various railway lines to work together harmoniously and unitedly in this war crisis. We challenge those who make this allegation to cite any evidence in support of it. They cannot do so. The allegation is without foundation. The railways, under the organization they voluntarily formed to direct the operation of their properties during the war, have without exception acted on every suggestion the Railroads' War Board has made to increase the amount of traffic moved.

"The present coal problem is not, as has been represented, altogether a problem of transportation. It is primarily a problem of distribution, for which the public must share the responsibility. The railroads cannot, with their existing facilities, handle a much larger tonnage of coal so long as the present system of distribution prevails. The present system of distribution involves a great amount of cross-hauling of coal, and a resulting large waste of transportation. The remedy doubtless requires surrender of convenience and old habits, but it is clear. It is to cause coal to be supplied to every section from the mines nearest to that section. No one unacquainted with the facts can conceive the unnecessary long hauls of coal which have grown up under the right of the shipper to route his traffic as he pleases. Whatever may be its justification in normal times, this practice effectively reduces the efficiency of the transportation machine in the time of heaviest traffic ever experienced."

SIMS CHAIRMAN OF HOUSE COMMITTEE

W. C. Adamson, for several years chairman of the House Committee on Interstate Commerce, has resigned from Congress to become a member of the board of appraisers of the port of New York, and Thetus W. Sims, of Tennessee, has been elected chairman of the committee and also vice-chairman of the Joint Committee on Interstate Commerce to succeed him. Dan V. Stephens of Nebraska succeeds Mr. Adamson as a member of the two committees.

A CHANNEL FERRY between Newhaven, England, and Dieppe, France, is the subject of an article by Colonel Barry in the Railway Gazette of London, issue of November 16, 1917. He urges the installation of such a train ferry at once, for even though the proposed tunnel from Dover will be constructed after the war, a train-ferry as suggested would have the same stimulating effect on international trade as is expected of the tunnel, while the ferry could be constructed in twelve months whereas it would take more than ten years to build the tunnel.

SALES OF NATIONAL FOREST TIMBER in the fiscal year 1917 were more than double those of 1916, according to the annual report of the Forest Service of the U. S. Department of Agriculture. The total amount sold exceeded two billion feet and is valued at more than \$3,715,000. During the same period about 727 million feet were cut and removed, for which the purchasers paid \$1,507,303 into the Federal Treasury. The largest sales were made in Oregon, where about 688 million board feet were disposed of. In addition to the timber sold, approximately 113 million board feet valued at almost \$150,000 was cut under free use permit by more than 41,000 settlers living near the national forests and depending on the forests for firewood and building material to improve their homesteads.

General News Department

Following the severe winter weather of last week, the Pennsylvania Railroad sent from its shops at Altoona, to different division points on the road, about 300 men, to repair locomotives.

The Pullman Company has granted a bonus of 10 per cent of their pay for the past six months to office employees who receive less than \$2,500 a year and to Pullman conductors and porters.

The Interborough Rapid Transit Company, New York City, will pay a Christmas bonus of \$5 to each employee who has been in the service one year and whose regular pay is less than \$150 a month.

Thirty locomotives built at the Baldwin Locomotive Works, Philadelphia, for military railroads in France have been ordered by the Government to be put in use on the Philadelphia & Reading, the Pennsylvania, the Baltimore & Ohio, and the Lehigh Valley.

The Erie Employees' Relief Association, a benevolent association composed of the employees of the Erie Railroad, appears to be insolvent. Application was made to the court at Buffalo, N. Y., December 18, for the appointment of a receiver. This association was formed in 1911, and the report indicates that pensions have been paid to retired employees on a basis more liberal than was justified by the receipts and assets of the association.

It is announced that a large share of the Christmas presents sent to soldiers have been safely landed in France and are being distributed through the various military postoffices. Over 600,000 separate parcels, weighing approximately 1,000,000 lb., were shipped from one Atlantic port before December 5. Large shipments were made from other eastern ports; and the Christmas parcels for soldiers and sailors at the various camps or cantonments in this country probably weighed over 2,500,000 lb.

The 416th Battalion of the United States Signal Corps is being recruited at Grand Rapids, Mich. The battalion is one of several which are being organized to take over the telephone and telegraph departments of the railroads now being operated by American railway units in France. During the illness of Major P. Kirk Pierce the recruiting work at Grand Rapids is being carried on under the direction of Major N. D. Ballantine, who recently left his position as assistant to the vice-president of the Chicago, Rock Island & Pacific at Chicago to relieve Major Pierce until his recovery.

Students from the department of transportation of the University of Illinois made a railway inspection trip in Chicago from December 18-21. The itinerary included visits to the passenger department of the Chicago, Burlington & Quincy, the Western Passenger Association, the Pullman Company, the freight tariff bureau and the development department of the Illinois Central, the freight claim and general freight departments of the Chicago, Burlington & Quincy, the Central Freight Association and the offices of the general auditor and controller of the Chicago, Rock Island & Pacific.

The Firemen's Wage Demands

Representatives of the Brotherhood of Locomotive Firemen and Enginemen held conferences at Chicago on December 15, 17 and 18, to prepare wage scales and working rules to present to the railroads.

The schedules were completed on Tuesday. The increases asked for range from 10 per cent for the higher-paid men to 40 per cent for those receiving \$2.50 for eight hours or 100 miles or less. All receiving more than the guarantees decided on want 10 per cent additional guarantees as follows: Firemen in passenger service per 100 miles, \$3; passenger firemen, not paid on a mileage basis, \$3.50 for eight hours; all classes except those in passenger and switching service, \$3.50 for 100 miles or less; those in switching service, \$3.50 for eight hours; helpers in electric service, \$3 for eight hours; inside hostlers, \$3.50 for eight hours;

outside hostlers, \$3.75 for eight hours, and their assistants, \$3.50. In all classes of road service, except passenger, they will ask time and one-half when runs are 100 miles or less. Time and one-half is also to be asked in switching service for all time above eight hours in each twenty-four.

St. Paul Union Station

The sinking of the foundation piles for the head house of the St. Paul (Minn.) Union station is now under way. The head house will be 150 ft. by 300 ft. and two stories in height, except over the main entrance, where the height of the building will be three stories. In addition, a waiting room, 375 ft. by 65 ft., will extend over the tracks. The exterior of the building will be of Bedford stone. The contract for the construction of the head house, for the grading for the elevation of the tracks, the building of retaining walls and the relocating of tracks, etc., is held jointly by the George J. Grant Construction Company and Morris, Sheppard & Dougherty, both of St. Paul. The estimated cost of the entire project is about \$15,000,000.

"Stop, Look and Loosen"

This was the legend on the front of the float of the Canadian Pacific Railway in the Victory loan parade in Montreal on Monday, November 19. The float, as shown in a picture published in the company's passenger bulletin, looks like a large passenger engine, with a tender; but in reality it is an effigy, made at the Angus shops in about 2½ days. Large banners, urging the purchase of bonds, covered the lower part of the "locomotive," so that the designers and artisans had to make the similitude of an engine only for those parts above the level of the tops of the driving wheels. In the parade the engine was manned by an engineman and a fireman, and also by "three of the prettiest lady workers at the shops, dressed in overalls."

Printing Telegraphs on Railroad Wires

The Telegraph & Telephone Age, in its issue of December 16, reports data from 70 prominent railroads of the United States and Canada showing the mileage of line, on each road, on which telephones are used for train despatching; and also the mileage of circuits on which printing telegraphs are used. The total length of road on which the telephone is used is 94,625, and of circuits on which printing telegraphs are used, 12,499. This last mentioned figure is made up as follows:

Name of Road	Name of System	Miles
Canadian Pacific	Morkrum	7,154
Chicago, Burlington & Quincy.....	Morkrum	659
Delaware, Lackawanna & Western.....	Am. Telegraph Typewriter.....	150
Missouri, Kansas & Texas.....	Morkrum	381
N. Y. Central, E. of Buffalo.....	Am. and Morkrum.....	570
N. Y. Central, W. of Buffalo.....	Morkrum	113
Pennsylvania	(*)	585
Pennsylvania, W. of Pittsburgh.....	Morkrum	1,129
Southern Pacific	Morkrum	1,266
Union Pacific	Morkrum	492

On the Pennsylvania the Wright printer is in operation between Philadelphia & Pittsburgh, 350 miles; and the Morkrum between Philadelphia and Altoona, 235 miles. Several other printing circuits are to be put in service on this road in the near future.

Axioms—For Railroad Men and Others

Unnecessary work is unnecessary expense.

An unnecessary job increases the work of every other job.

Unnecessary work shortens the time that should be devoted to necessary work.

The handling of unnecessary correspondence reduces the time that should be devoted to necessary supervision.

To answer a foolish question takes the time that may be devoted to asking a sensible one.

Information required that is not used is the worst form of inefficiency.

Authority decreases as it is divided and is weakened every time it is transmitted.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER, 1917

Name of road.	Average mileage operated during period.	Operating revenues—			Operating expenses—			Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) comp. with last year.			
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Equip. ment.	Traffic.						Trans- portation.	General.	Total.
Ann Arbor	301	\$193,435	\$43,934	\$237,369	\$24,204	\$33,556	\$8,041	\$112,805	\$9,803	\$188,991	\$68,223	73.48	\$13,100	\$55,123	—\$21,077
Atlantic City	170	110,786	98,106	208,892	37,112	18,151	2,084	131,408	914	189,640	83,711	83.71	1,000	25,897	15,311
Belt Ry. Co. of Chicago	31	.....	.....	326,556	35,609	44,350	1,374	151,893	7,968	241,194	87,807	62.00	13,898	73,909	—36,861
Kansas City, Mexico & Orient of Texas	465	108,572	14,213	122,785	15,223	17,877	4,085	54,513	4,852	96,552	32,011	75.10	6,000	25,978	20,744
Louisiana Western	207	261,612	89,517	351,129	20,406	38,911	8,064	71,537	8,351	149,355	246,037	37.77	13,740	232,116	108,128
Morgan's La. & Tex. R. R. & S. S. Co.	400	492,418	150,622	643,040	64,392	62,750	12,186	182,227	14,025	337,970	339,696	49.87	30,525	308,525	135,164
Oahu Ry. & Land Co.	114	82,090	30,724	112,814	22,775	2,201	35,443	35,443	5,083	65,310	54,477	54.47	7,685	46,912	18,536
Oregon Short Line	2,306	2,198,791	568,551	2,767,342	150,419	312,646	34,136	729,432	73,536	1,346,222	1,638,608	45.10	333,289	1,305,248	—272,819
Oregon-Washington R. R. & Nav. Co.	2,070	1,647,680	529,611	2,177,291	245,316	219,599	45,403	709,035	79,965	1,316,987	1,012,706	56.53	161,107	851,553	86,456
Phil. & Reading	1,127	513,273	723,580	1,236,853	393,404	1,232,495	43,990	252,444	96,928	4,305,121	69,580	69.50	1,890,003	178,158	—589,455
Port Reading	21	110,944	.....	110,944	30,261	10,900	40	18,446	2,116	118,759	22,961	84.80	10,500	12,461	—62,401
Pittsburgh, Shawmut & Northern	204	99,019	5,649	104,668	22,224	43,455	1,365	48,507	8,056	123,607	114,49	114.49	1,813	—17,456	—15,570
St. Louis, San Francisco & Texas	143	77,229	28,562	105,791	13,785	18,533	2,381	47,465	4,162	86,325	25,020	77.53	1,491	23,529	1,790
San Antonio & Aransas Pass	732	282,049	102,368	384,417	51,149	57,734	7,331	102,963	15,393	203,965	117,858	71.38	15,000	102,428	—87,684
Toledo, Peoria & Western	247	74,202	35,384	109,586	14,602	34,751	2,192	44,581	4,095	100,221	22,151	81.90	8,000	14,151	—16,811
Ulster & Delaware	128	52,237	13,960	66,197	14,437	11,406	763	45,051	3,237	75,152	6,297	92.27	6,000	496	—6,489
TEN MONTHS CALENDAR YEAR, 1917															
Ann Arbor	294	\$1,984,256	\$457,262	\$2,441,518	\$236,400	\$398,654	\$61,928	\$1,158,845	\$91,405	\$1,952,497	\$661,929	74.68	\$131,000	\$530,795	—\$47,814
Atlantic City	170	1,007,731	1,700,139	2,707,870	273,468	2,310,711	141,937	1,419,317	12,162	1,972,761	867,177	69.47	109,000	758,074	141,013
Belt Ry. Co. of Chicago	31	.....	.....	3,235,287	243,442	452,755	13,798	1,522,088	70,597	2,302,680	71,17	71.17	132,156	800,450	45,906
Georgia	334	2,207,671	895,166	3,102,837	273,021	494,290	139,046	1,289,611	92,658	2,290,056	1,063,970	68.28	159,128	1,004,694	20,064
Georgia Southern & Florida	402	1,373,937	2,359,452	3,733,389	331,003	529,403	72,525	1,859,910	92,893	1,890,784	468,669	80.14	133,068	334,206	—70,417
Grand Rapids & Indiana	575	3,569,681	1,434,957	5,004,638	663,741	963,370	103,775	2,443,303	193,090	4,385,486	1,100,816	79.94	241,714	858,520	—101,506
Great Trunk Western	347	5,998,816	1,360,284	7,359,100	960,790	1,467,103	164,561	3,492,468	203,889	6,355,667	79,37	79.37	127,350	1,278,994	—3,186,984
Great Northern	8,225	53,447,351	13,213,778	66,661,129	10,289,223	9,957,377	1,092,916	25,732,941	1,248,341	48,891,553	66,43	66.43	4,818,411	19,880,672	—3,186,984
Gulf & Ship Island	308	1,431,764	363,883	1,795,647	212,553	262,833	32,831	565,034	81,831	1,215,613	63,49	63.49	138,575	560,070	7,763
Gulf, Colorado & Santa Fe	1,937	10,196,596	2,907,698	14,034,254	2,596,502	1,985,700	295,598	4,560,156	542,732	9,555,688	70,93	70.93	695,089	3,379,591	422,100
Gulf, Mobile & Northern	402	1,572,831	269,006	1,841,837	258,663	324,725	40,651	591,422	88,116	1,303,640	639,129	67.10	93,467	545,654	75,391
Hocking Valley	350	7,560,039	800,304	8,360,343	1,915,229	1,957,420	90,196	3,002,536	208,184	3,990,460	2,999,217	66.64	698,000	2,294,493	597,457
Houston East & West Texas	191	1,073,018	335,541	1,408,559	190,069	157,072	23,366	484,554	32,299	890,448	617,733	59.04	127,730	488,251	75,867
Houston & Texas Central	930	4,573,005	1,433,110	6,006,115	848,159	763,215	175,527	2,037,475	124,703	4,073,872	62,91	62.91	4,369,458	1,958,591	238,552
Illinois Central	4,766	52,577,927	13,799,249	66,377,176	9,618,667	15,020,255	1,094,641	23,546,338	1,713,518	51,258,639	20,954,036	70.98	4,871,342	16,072,064	2,998,979
Indiana Harbor Belt	109	.....	.....	4,362,529	502,707	557,227	28,799	2,142,724	100,284	3,331,741	1,030,788	76.37	85,204	945,510	—275,352
International & Great Northern	1,160	6,933,548	2,452,688	9,386,236	1,804,226	1,637,812	226,107	3,705,569	710,700	7,004,837	69,51	69.51	311,638	2,759,101	845,874
Kanawha & Michigan	177	2,553,344	340,172	2,893,516	381,849	728,974	31,978	882,780	76,028	2,101,788	807,827	70.07	205,818	691,986	176,836
Kansas City, Mexico & Orient of Texas	465	860,658	160,131	1,020,789	188,711	245,932	39,659	554,300	48,559	1,077,160	100,21	100.21	53,500	—55,964	—67,582
Kansas City Southern	755	7,904,664	1,435,672	9,340,336	983,882	1,492,855	254,766	3,164,960	336,722	6,216,738	3,952,006	61.14	556,593	3,391,695	502,891
Lake Erie & Western	900	5,903,114	560,773	6,463,887	795,641	1,124,345	137,385	2,656,490	151,477	4,865,311	1,929,242	71.61	303,500	1,625,268	—386,457
Lehigh & Hudson River	97	1,705,039	4,364	1,709,403	184,289	293,829	16,529	693,358	50,319	1,238,325	66,413	65.01	66,400	600,012	—40,907
Lehigh & New England	296	2,951,202	13,071	3,085,536	369,114	456,363	28,446	938,853	89,239	1,881,622	1,203,914	60.98	165,010	1,038,904	126,429
Lehigh Valley	1,442	37,406,489	4,057,778	41,464,267	5,017,322	7,987,940	819,657	19,324,541	957,827	34,452,422	76,67	76.67	1,869,126	8,612,649	—2,034,445
Long Island	397	3,871,662	8,969,275	14,840,937	1,586,501	1,570,721	125,818	5,951,256	369,837	9,678,819	4,899,373	66.39	786,456	4,111,469	376,316
Los Angeles & Salt Lake	1,154	6,792,435	2,896,591	9,689,026	1,118,875	1,479,058	327,984	3,022,681	235,356	6,349,032	4,218,725	60.08	579,770	3,638,478	97,935
Louisiana & Arkansas	302	1,020,661	212,217	1,232,878	227,110	272,339	38,334	390,898	44,026	913,587	101,621	71.21	101,621	267,757	—61,543
Louisiana Ry. & Navigation Co.	332	1,525,871	348,866	1,874,737	260,926	272,983	63,997	751,340	66,269	1,415,515	575,946	71.08	173,154	402,288	1,448
Louisiana Western	207	1,990,063	237,698	2,227,761	222,804	333,625	78,393	631,655	72,348	1,362,617	1,560,907	46.61	352,535	1,207,091	41,141
Louisville & Nashville	5,070	45,735,208	13,042,347	58,777,555	7,715,170	12,171,110	1,277,987	20,726,317	1,319,754	43,328,369	19,425,327	69.05	3,770,907	15,643,910	—5,998,754
Louisville, Henderson & St. Louis	200	1,341,446	404,891	1,746,337	235,113	228,262	49,277	609,337	35,500	1,157,489	684,640	62.83	57,000	627,085	212,456
Maine Central	1,216	7,344,447	3,279,106	10,623,553	1,394,601	1,659,087	155,925	5,302,794	287,595	8,765,438	3,104,710	73.84	592,214	2,512,285	—505,819
Michigan Central	1,862	27,869,365	10,516,815	38,386,180	4,892,510	6,472,322	712,904	18,262,859	788,813	31,781,010	1,714,000	73.23	1,140,000	9,868,869	—1,814,436
Midland Valley	382	1,785,691	494,841	2,280,532	500,079	299,555	30,139	732,384	84,676	1,646,965	30,445	69.22	55,045	677,071	234,884
Minneapolis & St. Louis	1,647	6,825,558	1,610,378	8,435,936	1,368,987	1,015,163	178,233	3,733,557	228,016	6,523,370</					

REVENUES AND EXPENSES OF RAILWAYS

TEN MONTHS CALENDAR YEAR, 1917—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Maintenance of way and equip- ment.		Operating expenses			Net from railway operation.	Operating ratio.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.		
		Freight.	Passenger.	Total.	Passenger.	Equip- ment.	Traffic.	Trans- portation.	General.							
Nashville, Chatt. & St. Louis.....	1,237	\$8,551,844	\$2,846,964	\$12,418,872	\$1,291,830	\$2,377,968	\$552,012	\$4,719,631	\$357,325	\$9,416,259	75.87	\$2,994,613	\$440,000	\$2,552,080	—\$144,232	
Nevada Northern.....	165	1,857,603	153,862	2,063,037	208,108	209,490	8,219	1,379,359	56,500	862,643	61.82	1,200,394	104,365	1,096,028	97,191	
New Orleans & Northwestern.....	204	2,875,926	734,044	3,609,970	399,564	742,980	102,871	1,322,443	109,129	2,717,033	68.18	1,267,823	298,087	968,591	36,971	
New Orleans Great Northern.....	285	1,208,114	306,931	1,591,655	163,412	255,281	31,529	487,954	66,569	1,007,093	68.77	584,560	75,638	508,345	147,547	
New Orleans, Texas & Mexico.....	191	882,914	235,200	1,159,379	178,147	180,093	44,621	329,700	63,912	796,477	68.70	362,901	16,600	246,180	264,185	
New York Central.....	6,083	123,908,719	47,937,909	199,417,379	21,650,985	347,346,630	2,642,305	77,437,237	4,471,122	143,797,022	72.11	55,620,357	9,760,267	45,838,454	—13,612,022	
New York, Chicago & St. Louis.....	572	12,345,338	1,220,745	14,204,259	1,188,940	2,206,307	473,143	6,723,439	348,179	10,985,441	77.34	3,218,818	515,000	3,263,606	—326,564	
New York, New Haven & Hartford.....	1,995	34,059,288	28,518,141	71,643,938	7,360,876	9,912,396	435,517	29,984,019	2,011,907	50,825,035	70.94	20,818,903	2,685,000	18,128,224	—1,050,998	
New York, Ontario & Western.....	568	4,958,604	1,554,339	7,757,103	848,203	1,285,788	94,407	3,058,593	194,316	5,481,306	70.66	2,275,797	255,900	2,019,453	—44,815	
New York, Phila. & Norfolk.....	112	3,579,753	618,002	4,584,849	408,803	841,419	50,699	1,836,772	109,673	3,307,341	72.14	1,227,508	223,981	1,053,036	—303,262	
New York, Susquehanna & Western.....	136	2,151,334	498,378	2,961,302	277,911	333,684	23,060	1,575,287	57,008	2,265,473	76.50	695,829	148,833	546,371	—124,294	
Norfolk & Western.....	2,085	47,062,154	5,630,159	54,665,808	5,172,838	10,081,898	674,916	16,905,943	991,644	33,881,061	61.98	20,784,747	4,209,000	16,574,287	—3,374,907	
Norfolk Southern.....	908	3,167,796	1,028,381	4,468,206	548,657	648,240	81,766	1,563,540	199,127	3,042,375	68.09	1,425,831	160,120	1,264,920	37,789	
Norfolk Western.....	6,534	53,987,339	13,002,696	73,021,576	9,780,069	8,028,058	1,030,151	22,749,580	1,338,836	42,997,539	58.88	30,024,037	5,434,322	24,581,233	—155,611	
Northwestern Pacific.....	507	1,952,292	1,682,144	4,066,072	562,502	459,212	53,699	1,384,412	103,999	2,571,865	63.25	1,494,207	198,032	1,296,027	—14,984	
Oahu Ry. & Land Co.....	114	911,831	263,861	1,175,692	130,237	89,402	8,769	337,222	56,568	621,116	48.72	653,800	83,453	570,347	35,203	
Oregon Short Line.....	2,306	18,500,635	4,795,183	25,271,984	2,637,178	2,713,522	357,526	6,549,890	780,078	13,468,228	53.29	11,803,755	2,120,200	9,680,383	—75,801	
Oregon-Washington R. R. & Nav. Co.....	2,055	12,373,298	4,425,012	18,255,950	2,649,058	1,939,339	460,624	5,982,717	790,357	12,029,472	65.79	6,256,487	1,103,920	5,151,749	1,256,625	
Panhandle & Santa Fe.....	686	4,589,078	934,710	5,523,788	716,997	948,718	47,892	1,560,360	127,815	3,377,798	58.59	2,387,507	546,670	1,839,871	—285,347	
Pennsylvania Company.....	1,755	47,423,797	11,453,957	60,025,766	7,939,256	11,974,135	930,579	28,392,463	1,568,986	51,263,010	77.64	14,762,756	3,772,919	10,984,962	—7,119,623	
Pennsylvania Railroad.....	4,563	150,543,459	43,577,800	215,117,790	25,704,456	42,568,483	2,370,138	85,963,618	5,302,989	165,282,930	76.83	49,834,860	8,534,260	41,264,640	—6,191,163	
Peoria & Pekin Union.....	19	143,537	56,809	200,346	110,382	149,862	394	607,140	32,346	900,105	86.64	115,390	82,500	32,589	—106,095	
Pere Marquette.....	2,249	10,094,647	2,666,681	14,274,475	1,637,151	1,816,933	275,429	5,498,430	373,877	9,650,286	67.61	4,624,189	442,575	4,181,589	153,842	
Phila. & Reading.....	1,127	45,822,504	6,495,570	55,837,680	3,494,877	4,089,738	498,343	11,102,093	912,590	38,078,251	69.19	17,759,429	1,531,646	16,226,772	—3,700,354	
Phila., Balto. & Washington.....	718	13,407,672	11,038,945	26,905,138	2,325,470	5,033,124	316,737	11,102,093	584,255	20,248,755	75.26	6,636,383	867,929	5,788,032	—761,632	
Pittsburgh & Lake Erie.....	225	17,672,401	1,948,919	21,435,090	2,439,782	3,983,598	162,288	6,586,495	366,814	13,590,862	63.40	7,844,228	1,100,800	6,743,428	—2,977,622	
Pittsburgh & West Virginia.....	63	869,165	72,594	1,013,497	1,013,497	1,466,612	14,283	304,851	44,442	657,201	64.84	356,296	66,623	289,672	—260,374	
Pittsburgh, Cincti., Chic. & St. Louis.....	2,399	43,073,088	11,542,754	61,350,879	6,742,332	7,311,049	1,087,198	24,303,262	1,442,404	46,193,384	75.29	15,157,494	2,639,560	12,516,468	—260,374	
Pittsburgh, Shawmut & Northern.....	204	947,545	55,456	1,033,030	1,793,314	12,661,652	13,338	473,184	51,500	1,183,988	114.61	—150,958	17,922	—168,880	431,680	
Port Reading.....	21	1,329,951	.....	1,584,431	128,960	98,799	396	867,856	9,197	1,104,558	69.71	479,872	104,000	375,872	—134,253
Richmond, Fredericksburg & Potomac.....	88	2,003,452	1,527,062	4,008,571	304,389	451,049	38,420	1,396,021	86,689	2,317,782	57.82	1,690,788	309,879	1,380,758	47,383	
Rutland.....	415	2,019,692	1,077,715	3,497,407	445,775	580,517	104,339	1,503,776	82,689	2,729,120	74.79	919,968	195,180	724,629	—185,868	
St. Joseph & Grand Island.....	258	1,851,854	265,322	2,117,176	1,947,659	251,655	35,437	718,415	54,809	1,896,376	97.36	51,323	88,298	37,192	—47,465	
St. Louis, Brownsville & Mexico.....	548	1,824,137	1,057,911	2,882,048	3,204,781	485,183	390,994	103,902	894,540	109,281	1,960,853	61.19	1,243,928	80,000	1,162,879	—6,614
St. Louis, Merchant's Bridge Terminal.....	9	.....	7,631	2,629,085	331,428	166,266	9,313	1,333,988	78,486	1,919,482	73.01	709,603	79,201	630,362	50,975
St. Louis-San Francisco.....	4,752	31,600,902	12,418,834	47,283,594	5,369,962	7,652,143	652,291	15,671,687	1,273,103	30,413,317	64.32	16,870,277	1,962,981	14,894,368	—1,975,909	
St. Louis-San Francisco & Texas.....	198	664,527	217,472	961,336	164,589	160,139	21,856	440,217	56,452	843,253	87.72	118,082	14,913	103,126	57,815	
St. Louis-San Francisco & Texas.....	732	2,255,835	838,414	3,399,734	603,049	547,186	71,703	1,544,069	141,256	2,900,600	86.85	439,133	150,000	288,043	—47,465	
Seaboard.....	3,461	16,334,614	6,076,633	24,780,094	2,731,043	4,118,983	773,098	9,085,991	698,306	17,547,080	70.81	7,233,014	1,119,854	6,103,766	303,188	
Southern.....	6,983	48,435,710	18,915,890	73,847,360	8,231,856	12,031,974	1,686,691	25,497,095	1,812,960	49,459,665	66.98	24,387,695	3,361,614	21,000,447	2,612,277	
Southern in Mississippi.....	278	618,339	312,646	1,023,803	212,641	89,999	23,017	441,892	42,350	809,900	79.11	213,903	99,300	114,412	19,361	
Southern Pacific.....	7,089	80,061,360	27,446,892	107,508,252	14,858,026	17,744,602	1,774,974	41,538,971	2,711,839	72,586,887	61.75	44,937,715	36,637,930	3,643,751	91,944	
Spokane, Portland & Seattle.....	555	3,804,305	1,430,873	5,637,547	645,314	447,789	80,622	1,338,123	136,052	2,692,227	47.76	2,945,321	581,290	2,363,374	910,941	
Tennessee Central.....	292	1,046,139	347,334	1,492,363	232,416	235,203	48,909	540,104	70,424	1,126,977	75.52	365,385	48,000	317,348	6,003	
Terminal R. R. Association of St. Louis.....	37	.....	13,482	316,014	407,926	221,909	9,854	974,453	56,342	1,690,991	53.38	1,477,023	351,081	1,125,915	—139,583
Texas & New Orleans.....	81	711,715	118,230	910,520	81,360	49,355	28,023	286,125	35,833	475,840	52.26	434,680	73,955	360,066	79,401	
Texas & New Orleans.....	468	3,609,490	1,167,356	5,226,199	461,186	781,356	87,956	1,562,710	113,745	3,153,813	60.35	2,072,385	405,858	1,667,524	753,799	
Texas & Pacific.....	1,947	11,875,193	4,977,825	18,097,340	1,883,163	2,432,025	396,833	7,210,445	595,769	12,662,078	66.00	5,475,262	940,000	4,527,297	331,878	
Toledo & Ohio Central.....	4363															

Car Shortage Reduced

Reports to the Railroads' War Board show that on December 1 the excess of unfilled car orders amounted to 117,132 cars, a decrease of 22,880 compared with November 1, and an increase of only 10,000 cars compared with December 1 a year ago; although the railroads are handling currently at least 20 per cent more passenger and freight business than a year ago.

Illinois Manufacturers' Association Urges Appointment of Transportation Director

The directors of the Illinois Manufacturers' Association have addressed the following telegram to President Wilson:

"We suggest in order to secure more positive control of the transportation situation and as means of securing the operation of all the railroads of the country as a single unit with an obliteration so far as transportation problems are concerned, of all property lines, that the President of the United States appoint a director of transportation who shall select as his operating staff a committee of five railroad officials who shall have immediate charge of the operation of the complete transportation system; that the railroads carry both soldiers and all government war supplies free of charge during the duration of the war, and that in consideration thereof a fair return to the stockholders of the railroads' properties be guaranteed by the government."

Reductions In Passenger Service

Reports just compiled show that since the beginning of the war the railroads in the 15 states of the central military department have made reductions in passenger service aggregating 10,657,637 train miles per annum, equal to a saving of 1,176,085 tons of coal, 369 locomotives, 1,941 men and 203,839 barrels of fuel oil.

The Baltimore & Ohio proposes to take off two express trains each way, daily, between New York and Washington. The Pennsylvania and the Philadelphia & Reading will take off one train each way daily between Philadelphia and Cape May. By the new timetable the Reading will run an express to Cape May in the morning and the Pennsylvania will run one in the afternoon, and a corresponding arrangement will be made for the return trips.

The Louisiana Railroad Commission has authorized the Texas & Pacific to discontinue the operation of nine local passenger trains because of the scarcity of coal. It appears that these are the same nine trains which the road discontinued without the consent of the commission in November and which were restored on December 3.

Fuel Administration Calls for Reduction of Suburban Train Service

The United States Fuel Administration suggests the possibility of saving coal by cutting down suburban steam railroad passenger service during the non-rush hours. On many lines numerous trains are operated at non-rush hours which require only three or four cars for the small traffic handled. Many of these trains are run merely to afford a maximum of convenience through frequency of service. Competent railroad men have informed the Fuel Administration that, on the average, two of these non-rush hour trains could well be made to do the work of three by simply making an interval between trains. One important railroad as an experiment recently decreased its non-rush hour service, or made changes which proved economical without serious inconvenience to the public. This road has announced a further withdrawal of about 10 per cent of the total number of its suburban trains, whereby it will be able to release more than 1,000 tons of coal per month. It is suggested that the railroads do what they can and that the suburban communities, through community action, acquiesce where no great hardship is involved.

Contribution to the Railway Regiments' Tobacco Fund

Three contributions to the Railway Regiments' Tobacco Fund have been received in the week ending with Tuesday noon, December 18:

Dayton Malleable Iron Company, Dayton, Ohio.....	\$10 a month
Signal Appliance Association, contribution.....	17
J. Alexander Brown, New York.....	10 a month

Webb Bill Passed

The Webb bill, to legalize combinations of American exporters for the purpose of promoting foreign commerce, was passed by the Senate on December 11. It had already been passed by the House, but there were differences and it was sent to conference.

"Your Part"

This is the title of a circular decorated in red, white and blue, which has been issued to the employees of the Norfolk & Western by W. S. Battle, Jr., general claim agent of the road. It says, in part:

"Do you fully realize what this War means? Have you begun to do your duty toward your country? . . . If each one will handle freight as though it were *his own*, waste will practically disappear. It is believed that this company has not a single employee who would willingly cause loss or waste in the present time—yet waste is still going on. Do you not think that each one should *bestir himself* and 'deliver the goods'?"

"Do not think your efforts will *not do any good*. Suppose each one decided that his help was too small to count, what would happen? Consider what results could be accomplished if we all pull together.

"Talk over such matters with each other. Get the *habit* of trying to impress someone else with the importance of *protecting the freight of today*. Do this today and tomorrow and keep at it. Do not slack up, but keep trying to obtain better results, and you will soon learn that your efforts are of mutual benefit to your nation and yourself.

"Remember you are either *for* this country or *against* it; and you are against it, regardless of what you may say, unless you clearly show by your work and results that you are helping the nation to conserve its resources."

Mississippi Roads Fight Heavy Tax Assessment

The Illinois Central, the Yazoo & Mississippi Valley and other railroads in Mississippi were granted restraining orders on December 11 by Judge A. C. Niles, of the federal district court at Jackson, Miss., forbidding the Mississippi Railroad Commission to enforce tax assessments against the roads for 1917. With the creation of a new equalizing body in that state, taxes on general property were increased about 43 per cent. The assessment of railroad property, which, the carriers claim, was 100 per cent of its true value in 1916, was increased from \$64,000,000 to \$98,000,000. The increases for the Illinois Central and the Yazoo & Mississippi were alone \$10,000,000 and \$7,500,000, respectively, or about 66 per cent. The increase in the assessment of the property of the St. Louis-San Francisco amounted to about 50 per cent, and the increases in the assessments of other roads were likewise very large. The carriers maintain that the increase in the assessment of general property only brings it up to about 57 per cent of its value, whereas the increase in the assessment of railroad property puts it considerably above 100 per cent of its value, and in the cases of the Illinois Central and the Yazoo & Mississippi Valley as high as 166 per cent. The railroads contend that their property should be assessed on the same basis as that of other property, and on January 4, will appear in the United States District Court at Jackson to apply for a temporary injunction. If this is secured steps will be taken to obtain a permanent injunction against the railroad commission. Pending the outcome of the litigation the carriers have agreed to pay the same taxes that they paid in 1916.

Rock Island Announces New Pass Rules

The Chicago, Rock Island & Pacific will on January 1 put in effect new regulations covering the issuance of complimentary annual passes to employees and their wives. Under the new rules some employees will be given complimentary annuals on appointment and others after one year in the service; or five years, 10 years, 15 years, 20 years, or 25 years. When a position requires traveling, an employee will be furnished such transportation as is necessary upon appointment. System passes will be issued to officers and officers' wives upon appointment. Pensioned employees and their wives will be furnished with the same class of annual pass as they had at the time pensioned. Wives of employees holding what are termed "traveling positions" under general or district officers will be given system

annual passes upon appointment. Among employees coming under this provision are service inspectors, district car inspectors, claim adjusters, demurrage inspectors, pilot engineers, special agents, traveling auditors, fuel inspectors, tie inspectors, bridge inspectors and traveling car agents.

Under the provisions of the schedule governing the issuance of complimentary passes to employees who do not come under the class of traveling positions, station agents at larger terminal stations, freight and passenger department agents, chief clerks to system, district and division officers, assistant chief clerks to general officers, telegraph managers and wire chiefs, are granted system annual passes for themselves and wives on appointment. Train service employees are granted division annual passes at the end of one year's service and their wives are granted division annuals at the end of five years' service. Both are permitted district passes at the end of ten years' service and system passes at the end of 15 years. Agents at the smaller stations, telegraphers, chief clerks to local division officers, yardmasters, switchmen, shop and roundhouse foremen, machinists, blacksmiths, boilermakers and their helpers, signal foremen and maintainers and like employees, will receive annual division passes at the end of five years, district passes at the end of 10 years and system passes at the end of 15 years. Laborers and janitors will receive annual passes for themselves and wives for the system at the end of 25 years' service.

Thirty Army Trucks on 600 Mile Run

The latest plan for helping to relieve the railway congestion was put into effect this week when a train of 30 Packard army trucks left Detroit for a port on the Atlantic seaboard, 600 miles distant. It is hoped that this fleet will be the first of a number totaling 30,000 trucks of various makes. The plan if carried out successfully will release 17,250 cars, says the Quartermaster-General, and it will also be the means of training hundreds of drivers for their duties later in France. Twenty-eight of the 30 cars are carrying freight. Two are loaded with gasoline, oil and repair materials. In some of the cars berths for drivers have been built so that if necessary the trucks can be run night and day with relief drivers.

The Quartermaster-General estimates that if the plan proves successful, the total relief given to the railroads, through the shipment to the coast under their own power of the 30,000 war trucks the Army has under construction, will amount to 690,000 tons. The trucks have an average capacity of three tons and only two of them can be shipped by rail in a 40-ton freight car. The new plan will, therefore, relieve fifteen thousand 40-ton freight cars, and will also permit the transportation of 90,000 tons of Government materials to the coast from the interior storage depots. The actual number of freight cars which the plan will relieve, therefore, if successful, will be 17,250 forty-ton cars.

The plan will serve also another urgent need, that of providing adequate opportunity for the training of an effective corps of transport drivers and officers.

The training which our men will receive in driving loaded Army trucks from factory to seaport under the trying conditions which will be encountered this winter will, as nearly as possible, reproduce the actual service conditions abroad. Under the plans worked out the transport companies will negotiate drives of varying distances up to 800 miles over various types of highways, and our men will have met and solved actual problems which will be invaluable to their efficient service behind the lines.

"Dementia Pullmaniana"

Springfield, Mass., has the distinction of being one of the most interesting junctions of the three principal railroads of New England; and like all important junctions is blessed with more or less noise. The following letter from The Springfield Republican of recent date, signed Frank A. Waugh, tells of one of the days when it was more. A New York-White River Junction car enjoys the hospitality of all of the three railroads at Springfield, so that, as regards the criticisms of this writer, all three, very likely, are entitled to share the honors. Beginning with an allusion to the general reputation of the city for hospitality, Mr. Waugh continues:

Yet possibly the entertainment committee might do something

further for the regular Pullman guests. The night train between the two great metropolises of New York and White River Junction is a special case in point. We leave New York at 11:15 and reach Springfield at 3:38 in the dull morning. There we are scheduled to wait until 6:55. For the first three-quarters of an hour our sleeper is used in breaking up and making up trains. We are shunted wildly up and down the yards. First the driver will yank us all up to one end of the berths; then he will butt us back to the other end.

He then sets us out on a siding to cool off. We need it. But we don't need so much of it. There being no heat attached to our car we get busy conserving coal. We soon save up enough to run the road for a month. While we are shivering on our shelves we are soothed with music—the music of passing freight trains and of impetuous switch engines, each one madly ringing its bell and running with the muffler cutout wide open.

Then the Springfield Republican appears on the scene. The young Caruso who shouts it under our windows also announces the "Murkan." He is assisted at his aubade [an open-air morning serenade] by an enemy alien who, having escaped the draft, now smashes baggage on the platform beside us, meanwhile carrying on a "konversazion" with a "kamerad" over by the American express office or down by the bridge.

The call of The Republican seems to be irresistible with the Springfieldians in our car. Their heads are exerted between the curtains and their sweetly modulated voices call up and down the aisle for the porter. The next hour is occupied with their matutinal toilets, while we listen to such gossip as: "Hello, George! Didn't know you were on this car!" "Yes; got on at N' York." "Fine morn—whose got my—Say, port', mileage book, upper seven!" etc.

Then, just before we freeze to death or are consumed with dementia pullmaniana, the train pulls out. The porter brushes the last Springfield passenger off the car and turns to rouse the Northampton ticket-holders. He finds us already pretty well aroused, yet sad in our politeness to think that we cannot pass before the Springfield entertainment committee with the high handshake ceremony and tell them how greatly we have enjoyed our call in their city.

Hospitality for the Soldiers

The Soldiers' Welfare Committee organized by the St. Louis sub-committee of the Commission on Car Service in connection with the railroad department of the St. Louis Y. M. C. A. has been doing an important work in extending hospitality to the soldiers passing through St. Louis. Last month the committee, of which Rubens Humphrey, executive secretary of the Y. M. C. A., is chairman, met troop trains or groups of soldiers almost daily. Forty troop trains or groups of soldiers, comprising 6,522 men, received the hospitality of the committee during November. On one day the committee met six different groups or trains of men. Soldiers passing through from points in the east, west and southwest were given the opportunity of stopping over at the Railroad Y. M. C. A. building and the privilege of bathing and writing letters. Postal cards, note paper, envelopes and stamps were provided free. The ladies on the committee had furnished supplies of apples, figs, raisins and candy, besides arranging for a social time while the soldiers were in the city.

The committee comprised 70 men and women divided into 14 sub-committees, each of which had charge of the arrangements for one day at a time. The chairman of the committee received direct information from the railroad companies as to the movement of troop trains and directed the movements of the sub-committees without advising them as to the destination of the trains. Many of the committee members, in addition to contributing their time, gave money and turned over their automobiles for the use of the committee.

In one instance the attention of the committee was called to the fact that a barber doing business near the Union Station had charged a soldier \$3 for a shave. The co-operation of the chief of detectives of the city police was immediately secured and the man was arrested. At another time the committee was informed that Canadian soldiers passing through were being charged approximately 20 per cent discount for changing Canadian money to American money. The committee secured from the Railroad Y. M. C. A. over \$500 in American money which was exchanged for the Canadian money on an even basis. A large number of the Canadian soldiers passing through told the committee that

St. Louis was the only place en route from Toronto where any one had met them at stations or provided them with little comforts and writing materials.

The June Conventions

The executive committees of the Master Car Builders and the American Railway Master Mechanics' Associations held a meeting at the Hotel Biltmore, New York, Thursday, for the purpose of deciding whether or not a convention be held in June, 1918. The result of the deliberations will be published in next week's issue.

Portland Cement Association

B. F. Affleck, Chicago, was re-elected president of the Portland Cement Association at its annual meeting at Hotel Biltmore, New York, on December 12. Mr. Affleck is president of the Universal Portland Cement Company. F. W. Kelley, President of the Helderberg Cement Company, Albany, N. Y., was elected first vice-president, and Richard Hardy, president of the Dixie Portland Cement Company, Chattanooga, Tenn., second vice-president. G. S. Brown, president of the Alpha Portland Cement Company, Easton, Pa., was elected treasurer.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.

- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next annual meeting, March 20-22, 1918, Chicago.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 22-24, 1918, Hotel Sherman, Chicago.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Morrison Hotel, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 568 Union Arcade Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month. Room 1856, Transportation Bldg., Chicago.
- NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 149 Peoples Gas Bldg., Chicago. Annual exhibition, March 18-21, 1918, Coliseum and Annex, Chicago.
- NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.
- NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.
- NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—Geo. A. J. Hochgrebe, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.
- PACIFIC RAILWAY CLUB.—W. S. Wollner, Assistant to Chief Engineer, Northwestern Pacific R. R., San Francisco, Cal.
- PEORIA ASSOCIATION OF RAILROAD OFFICERS.—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.
- RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Pittsburgh Commercial Club Rooms, Colonial Annex Hotel, Pittsburgh.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.
- SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.
- TRAFFIC CLUB OF CHICAGO.—C. B. Singer, La Salle Hotel, Chicago.
- TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.
- WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.
- WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.
- WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, Secretary, 1735 Monadnock Block, Chicago, Ill. Regular meeting, first Monday in month, except January, July and August. Extra meetings generally on other Monday evening except in July and August.

Traffic News

In the United States Court at Newark, N. J., December 18, fines amounting to \$6,000 were imposed on the Delaware, Lackawanna & Western for violation of the law forbidding carriers to keep animals in cars more than 28 hours. The Central of New Jersey was fined \$100 on a similar charge.

The freight traffic passing through the Sault Ste. Marie canals in the month of November amounted to 11,154,508 short tons, of which 8,753,843 tons were eastbound and 2,400,665 westbound. Of the westbound movement 1,885,586 tons were soft coal and 332,210 tons hard coal. Nearly 38,000,000 bu. of wheat and over 7,000,000 bu. of other grain passed through the canals to eastern destinations.

The Commission on Car Service has cancelled its general orders C S 3 and C S 3A, issued in June, directing the railroads to return hopper and self-clearing cars immediately to the home road when released from original road. Any existing restrictions prohibiting the use or interchange of interchangeable open cars are ordered cancelled so that unrestricted interchange of such cars may be permitted.

The Post Office Department announces that it has established coastwise parcel post water routes to relieve the railroad congestion. Steamer routes for parcel post have been established from Boston to Norfolk, Boston to Savannah, New York to Norfolk, New York to Charleston, New York to Jacksonville, New York to Savannah, New York to New Orleans, New York to Galveston, Philadelphia to Savannah, Philadelphia to Jacksonville, Baltimore to Savannah, and Baltimore to Jacksonville. Special delivery, insured and perishable parcels, and those too large for inclusion in sacks will not be carried on these routes. At present about four carloads of parcels are handled daily. The Post Office department has effected some saving of cars by routing through cars for long distances where it has been the practice to transfer.

In a recent telegram to John L. Nagle, manager of the California Fruit Exchange at Los Angeles, Cal., Edward Chambers, chairman of the transportation committee of the United States Food Administration, announced that beginning December 1, shippers of oranges and lemons would be required to load refrigerator cars seven boxes wide and two high the entire inside length of the car, either under ventilation or refrigeration. He also asked shippers of vegetables and deciduous fruits to advise him of the limit of safety to which they could increase the carload above the minimum, so that proper regulations might be issued at once. He stated that a careful survey of transportation conditions led him to believe that with the maximum co-operation of all shippers the railroads would be able to handle perishable freight this winter without serious delay.

Louisville, Ky., reported on Monday 17 inches of snow and temperatures down to seven below zero. Transportation was temporarily paralyzed throughout a larger part of Kentucky. The Ohio River was frozen over at many places, and all river transportation was stopped. Congestion of railroads at the Louisville and Cincinnati gateways increased. The National Fuel Administration on December 15 instructed W. B. Bryan, Kentucky Fuel Administrator, to seize approximately 3,000 cars of coal between the eastern Kentucky fields and Cincinnati and distribute the coal through Kentucky, where the public was in bad shape due to the diminution of the West Virginia natural gas supply. This coal was waiting entry into the north and east through Cincinnati, but the carriers north of the river had been unable to accept the cars, some of which had been held for two weeks.

Foresight

The Forest Service, United States Department of Agriculture, reports that by the use of a three-deck barge capable of carrying 2,700 sheep at a time, a hitherto unused grazing range for approximately 75,000 sheep, at the head of Lake Chelan, in the Chelan National Forest, Washington, has been made available for

use. Lake Chelan is a beautiful body of water, 52 miles long. The head of the lake is practically inaccessible by land, but the lower end is convenient to a railroad and also to the bunchgrass ranges of eastern Washington upon which the sheep men of that region have for many years wintered large numbers of sheep. They lacked summer range, however; while the summer range at the head of the lake is particularly good.

Officers of the Forest Service suggested the construction of a barge to be towed by a small steamer. This was done, and 37,000 sheep were carried to the head of the lake the first season. Thus the National Forest land is utilized, and the boat makes accessible a large adjoining area in British Columbia inaccessible from the Canadian side. The stockmen intend to build another and larger barge for use next season.

Rules for Putting Two "Car-Loads" in One Car

J. W. Roberts, superintendent of freight transportation of the Pennsylvania Lines West of Pittsburgh, in a circular to agents, recommending the loading of two "car-load lots" in a single car, where practicable, gives detailed instructions for the loading and billing of such shipments.

Shipments may be consigned to one or not more than two destinations, provided the first destination is intermediate to the second by available routes. Two shipments will not be accepted if the first destination is a prepay station. Shipment for the first destination must be for delivery on public team track or private siding of the railroad that performs the road-haul service to or from the first destination (not on the tracks of a switching line). The shipment for the second destination will be delivered under regulations published by the delivering line, the same as though the car had contained no other shipment. The carload rate at the actual weight, subject to minimums prescribed in the Official Classification or tariffs lawfully on file, will apply on each consignment. The two shipments should be so loaded as to permit unloading without re-handling. Separate bills of lading will be issued, and a separate revenue waybill made for each consignment, the same as though each shipment were loaded in a separate car.

Waste of Using Flimsy Boxes

At the hearing held by the Interstate Commerce Commission in Boston on December 12 W. H. Doble, of the Pneumatic Scale Corporation, presented a statement concerning economical packing and loading, in which he said:

In considering increase of railroad rates necessary to properly meet advanced costs in labor and material, any possible savings to be secured by more efficient methods should be taken into account. The package freight car is responsible for the greater part of the wasteful short loading. Containers in which merchandise is offered for shipment are so weak and fragile that they cannot be stacked more than two tiers deep without crushing, owing to the indiscriminate nature of the freight. Grindstones and silk hats don't mix well. Until a substantial container is universally adopted, this short loading of cars is bound to prevail. Representatives of two roads have stated confidentially that the clerical expense involved in handling loss and damage claims is increasing and at present costing these two roads \$500,000 each per year. Of the \$50,000,000 annual loss and damage payments \$15,000,000 is lost through "rough or careless handling"; \$7,500,000 results from the loss of package freight through its going astray because of effaced or improper marking; \$1,000,000 yearly is attributed to concealed loss; \$3,000,000 is attributed to wrecks; \$5,000,000 is attributed to leaky car roofs, oil-soaked cars, etc., and the remaining 37 per cent consists of miscellaneous losses and those upon shipments other than in package form.

The speaker then went on to describe the collapsible metal carrier, with which our readers are well acquainted. He quoted from the American Railway Association's committee report to the effect that this carrier is many times stronger than a wooden box and practically indestructible in the ordinary wear and tear of freight handling. An automatic lock prevents it from being opened without clear evidence of robbery. It therefore prevents concealed losses, prevents damage, does not absorb moisture, and can be used over and over again indefinitely.

Continuing, he said: Investigation of the past four years proves that full efficiency of labor and space in the handling of

package goods can only be attained by the adoption of containers of such strength that no ordinary shock of traffic will change their inside contour. The one-trip, fragile container now in use represents an annual waste of \$120,000,000. The Government during the past 12 months has paid millions for one-trip containers, which might have been saved. This same \$120,000,000 by its drain on the pulp industry, has increased the price of paper to an unwarranted degree. Roads are urging the shipper to use stronger containers and the logical solution of this problem is in the use of a many-trip container. The economy is based on the strength of container, the shipper to secure maximum number of trips, the railroads to secure immunity from loss and damage, as well as increased loading efficiency. Over 800 prominent shippers throughout the United States have signed petitions asking that the roads make it possible to use a many-trip container on a mutually reasonable basis of cost.

A Plain Tale from the Hills

[From the Boston Transcript]

Bangor & Aroostook Railroad affairs were ventilated at the rate hearing (December 14) before the Interstate Commerce Commission examiner, Wilbur La Roe. Percy R. Todd, president of the road, testified that for a period of years it has shown a decreasing operating ratio. Examiner La Roe commented upon the comparatively good showing of the road; that it can put money out of its earnings into the maintenance of the property to such an extent that it need not carry any depreciation fund and at the same time can pay a dividend of 4 per cent; and he could not understand why the company should appear now and ask for an increase in rates.

To this President Todd replied that the increase asked for will amount to only \$20,000 a year to the company, a sum which the road needs to cover losses that are almost certain to come in the future. There is almost certain to be a drop in revenue. There are not so many potatoes to move. For about eleven years Mr. Todd has been trying to find out how many potatoes are raised and what the farmers are doing with them, and Mr. Hoover has been trying for some months to obtain the same information, but they have not been able to find out. The farmers will not tell. It is evident, however, that the potato crop this year was between 30 and 40 per cent short. There is storage capacity for about 7,000,000 barrels along the railroad and there are not more than 1,000,000 barrels stored today. The farmers have built their own storehouses this year, however, and how much they have in them it is impossible to find out. But the railroad has handled 5,000 cars less, so far, than it handled last year up to the same time.

And the lumber movement will be smaller than usual. The lumber men have difficulties in getting labor, and declare that they will not be able to cut more than 25 per cent of the normal crop. Mr. Todd said that it was 22 degrees below zero on his line last night, which is not an unusual temperature; and the freight capacity shrinks by 40 per cent. Snow plows with two engines have to run almost constantly from December 15 to March 15, and passenger trains have to use two locomotives on the grades. Track laying is suspended from November until June, and when the frost comes out of the ground it is likely to come out from under one rail before it gets out from under the other, making operation dangerous.

The company needs more cars. It started to buy new cars, but the Government requests the roads not to buy new cars now. Then it bought 200 old freight cars out West, to be strengthened before they were delivered. After the work of repair had been started at one factory the Government notified the railroad that the factory was needed for war work, and the cars had to be sent to another place. Unable to get enough cars that way, the railroad started to build 150 at its own yards and bought all the material and carried it to its own plants to be assembled. Although it secured more men than it had before, it could not get more than 75 per cent efficiency out of the labor, and had to abandon the idea of assembling the cars with its own men. Then the material was collected and shipped away again to Laconia, N. H., to be assembled there by a car-building company.

OCTOBER A RECORD MONTH IN CANADA.—The Canadian railways handled the greatest volume of traffic in their history during the month of October. The total gross earnings amounted to \$34,379,125.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The Interstate Commerce Commission has announced an informal hearing before its Fifteenth Section Board at Washington on December 19 on the application of the Southeastern Passenger Association for approval of a proposed increase in charges for interchangeable mileage books in the Southeast.

STATE COMMISSIONS

Proposed Reduction of Freight Rates in Georgia

The State Railroad Commission of Georgia, in a tentative report on its consideration of the request, presented many months ago by all of the railroads of the state for authority to make an increase in freight rates, has issued a circular outlining the principles on which it proposes to authorize certain changes; and a hearing has been appointed for January 22, when criticisms or suggestions will be received. The order proposes some reductions in rates, but there will be no final approval of reductions until after the proposed tariffs have been tried for a time and the records have been compared with records of movement under the old rates. The commission's order is summarized as follows:

First. The commission declined to adopt the Southern classification with Georgia exceptions, in lieu of the present Georgia classification, but retained the present Georgia classification with certain amendments and eliminations which will produce a more nearly complete uniformity in classification ratings and descriptions. Southern classification was declined largely on the ground that it would produce an unwarranted increase in freight rates.

Second. The commission revised its freight classification of railroads in Georgia, eliminating the present four grand classes and reclassifying the carriers of Georgia in two grand divisions, class A and class B, the former including all so-called trunk line railroads and their subsidiary branches, while the latter class takes in the small roads.

Third. The commission proposes to eliminate its present joint freight rate rule, and to prescribe the mileage scale for the combined mileage of joint hauls, plus a scale of arbitraries, ranging from 8 cents, first class, down to 2 cents per 100 lb., class C.

Fourth. The commission proposes to eliminate the present "basing point" system of rate construction in Georgia and apply the long-and-short-haul principle, a change of great importance to Atlanta, Macon, Augusta, Savannah and others of the larger centers which now operate as basing points. The effect of this change is to increase rates between present basing points where such present rates are lower than to intermediate points.

Fifth. The commission has prescribed a maximum of 95 cents per 100 lb. (470 miles) on intrastate first-class traffic, and a minimum of 16 cents (5 miles), and prescribes a percentage relationship of all classes to first class.

PERSONNEL OF COMMISSIONS

B. H. Meyer has been nominated by President Wilson for reappointment as a member of the Interstate Commerce Commission for seven years; and the Senate has confirmed the nomination.

COURT NEWS

Trackage Agreement Construed

Under a trackage agreement between two railroad companies, the object of which as expressed in the agreement was to enable one of the companies to connect disconnected portions of its railroad to form a continuous line, and to operate trains to and from points on its own road, the other company granted the right to use in connection with it a part of the railroad owned and operated by it, "including the main tracks, sidings, passenger and freight stations, Y's, inclines and other appurtenances and terminal and station facilities connected therewith." The Ohio

Supreme Court holds that the grantee company has no right to the use of a track built by the owning company on the right of way and connecting its main track with the mine tracks of a coal company, which track was not built for the general use of the railroad companies, but for the convenience of the coal company. The question was raised in a complaint to the Public Utilities Commission against the grantee railroad requiring it to furnish complainant cars for hauling its product. The commission's order in favor of the coal company was reversed. The court holds that the rights acquired by the grantee were contract rights, subject to the limitations and restrictions contained in the agreement, and the duties of that company to the public were not the general duties of a common carrier operating on its own road. That company could not be required to furnish cars to a coal company whose mine was situated on the part of the railroad over which the railroad was operating under the traffic agreement, if in the rendition of such service there would be a violation of a restriction contained in the agreement.—*Kanawha & M. v. Public Utilities Commission (Ohio)* 117 N. E., 353. Decided May 29, 1917.

UNITED STATES SUPREME COURT

Records of Shipments of Intoxicating Liquors

The Supreme Court of the United States has affirmed the judgment of the North Carolina Supreme Court (169 N. C., 295) adjudging the Seaboard Air Line guilty of violating section 5 of the North Carolina statute of 1913, requiring railroad companies to keep a separate book in which shall be entered the name of every person to whom intoxicating liquor is shipped, together with amount, kind, date of receipt, etc., to be followed by the consignee's signature, acknowledging delivery; providing that the book shall be open to inspection by any officer or citizen, and making failure so to do a misdemeanor. The company refused to permit a citizen to inspect its record of liquors transported from Virginia into Wake county, N. C. The railroad contended that the section was void as an attempt by the state to regulate interstate commerce, and also that, to comply, the carrier would violate the law which prohibits the disclosure of such information regarding shipments to third persons except under specified circumstances; and that the Webb-Kenyon Law of 1913 could not affect the application of these principles to shipments destined to points in Wake county, because it relates to liquors intended to be received, possessed, sold or used in violation of state law, and to receive or possess liquor in any quantity in that county is not unlawful. The Supreme Court said, by Justice McReynolds: "Since our decision in *Clark Distilling Co. v. Western Maryland Ry. Co.*, 242 U. S., 311, 320, 324, it has not been open to serious question that the Webb-Kenyon Law is a valid enactment; that its purpose was to prevent the immunity characteristic of interstate commerce from being used to permit the receipt of liquor through such commerce in states contrary to their laws, and thus in effect afford a means by subterfuge and indirection to set such laws at naught; and that under it a state may inhibit shipments therein of intoxicating liquors from another by a common carrier although intended for the consignee's personal use where such use is not actually forbidden. Plainly, therefore, after that enactment nothing in the laws or Constitution of the United States restricted North Carolina's power to make shipments of intoxicants into Wake county a penal offense irrespective of any personal right in a consignee there to have and consume liquor of that character. "The challenged act instead of interposing an absolute bar against all such shipments, as it was within the power of the state to do, in effect permitted them upon conditions intended to secure publicity, to the end that public policy might not be set at naught by subterfuge and indirection. The greater power includes the less.

"The provisions of section 15, Act to Regulate Commerce, here relied on, were intended to apply to matters within the exclusive control of the Federal Government; and when by a subsequent act Congress rendered interstate shipments of intoxicating liquors subject to state legislation, these provisions necessarily ceased to be paramount in respect of them." Justice Van Devanter dissented. Decided December 10, 1917. (The court has sustained the Idaho law which is truly "bone-dry." Under it no person, without a permit, may possess liquor for medicinal, religious or industrial purposes).

Equipment and Supplies

FREIGHT CARS

THE UTAH COPPER COMPANY is inquiring for 200 60-ton hopper ore cars.

THE ANACONDA COPPER MINING COMPANY is inquiring for 10 40-ton box cars.

THE REPUBLIC CREOSOTING COMPANY, Indianapolis, Ind., is inquiring for five 10,000-gal. tank cars.

T. E. HAMMAN, Milmine, Ill., has ordered 5 box cars from the Central Locomotive & Car Works.

JOSEPH E. GRANVILLE, St. Louis, Mo., has ordered 4 box cars from the Central Locomotive & Car Works.

THE UNITED STATES GOVERNMENT has ordered 65 gun cars from the American Car & Foundry Company.

THE PETROLEUM PRODUCING & REFINING COMPANY, Tulsa, Okla., is inquiring for from 30 to 50 tank cars.

THE OREANA GRAIN COMPANY, Oreana, Ill., has ordered one box car from the Central Locomotive & Car Works.

THE FRENCH GOVERNMENT has ordered 1,000 steel underframe flat and 850 steel underframe gondola cars of 60 cm. (1 ft. 11½ in.) gage from the American Car & Foundry Company.

THE UNION PACIFIC's order for 50 caboose cars, reported in a recent issue of the *Railway Age Gazette* as given to the Mount Vernon Car Manufacturing Company has been transferred to the American Car & Foundry Company instead.

SIGNALING

THE NORFOLK & WESTERN has ordered from the Union Switch & Signal Company 15 signals, style S, for use on the Big Sandy division, near Kenova, W. Va.

THE JACKSONVILLE (FLA.) TERMINAL COMPANY has ordered from the Union Switch & Signal Company the material for two interlocking plants, towers 1 and 3, at the new Jacksonville passenger terminal. These machines will have mechanical levers for switching and electric power for signals.

THE PHILADELPHIA & READING has contracted with the Union Switch & Signal Company for the complete installation of an alternating current system of automatic block signals between the Delaware River Bridge and Skillman, N. J., 13 miles, three track and four track. The signals will be style T2 and the track relays Union Model No. 15, vane type. The work will also embrace the installation of a Type F electric interlocking at Trenton Junction, 11 levers. Changes will be made also at other interlockings and there will be two new twelve-lever mechanical machines, one at Hopewell and the other at Trenton Junction.

NEW YORK STATE HIGHWAY MILEAGE.—The designated mileage of state and county highway systems in New York State is 11,988, of which 5,926 miles had been completed and accepted on January 1, while contracts in force at that time covered 1,185 miles. This, with the contracts awarded during the year 1916, leaves a balance of designated mileage not yet cared for of 4,210. Highway construction during the past two years has been greatly hindered by shortage of labor.

INCREASED RATES IN NORWAY.—A substantial temporary increase in the rates on the Norwegian State Railways, both for passenger and freight traffic, has been decided upon owing to the very material increase in the cost of operating the railways. Including previous temporary increases in the railway rates, the rise amounts to 80 per cent for first and second-class passengers, 60 per cent for third-class passengers, 100 per cent on passengers' baggage, and 100 per cent on express and ordinary freight traffic, except articles of food and fuel, for which commodities the increase amounts to 70 per cent, and milk, for which it is 50 per cent.

Supply Trade News

The Greaves-Klusman Tool Company, Cincinnati, Ohio, has purchased the plant of the Champion Tool Works and will use it as an erecting plant in addition to its present works.

L. S. Love has resigned as sales manager of the Sheritt & Stoer Company, Philadelphia, to become general manager of the Machine Tool Engineering Company, Singer building, New York.

N. B. Payne has opened an office in the Havemeyer building, 25 Church street, New York, as an electric crane specialist dealing in new and used traveling cranes. Mr. Payne was formerly associated with Manning, Maxwell & Moore, Inc., New York, and has an extensive experience in this kind of work.

James K. Howard has been appointed general manager and elected a director of the A. G. A. Railway Light & Signal Company with headquarters at the company's main office, Elizabeth,

N. J. Mr. Howard was born on August 8, 1871, at Zanesville, Ohio. He entered railway service on the New Haven & Derby as a rodman, but left in 1890 to enter Rutgers College where he studied until 1893. He then entered the employ of the Peoria & Pekin Union, serving successively as assistant engineer and engineer until 1899. In July, 1900, he went with the Wabash as division engineer, leaving in July, 1905, when he entered the service of the Chicago, Peoria & St. Louis as engineer of maintenance of way. After serving



J. K. Howard

in this capacity until January, 1907, he left the road to become engineer in charge of railway surveys in eastern Ohio and western Pennsylvania. In July, 1910, he was appointed engineer of maintenance of way on the Ann Arbor, leaving in January, 1913, to become assistant chief engineer for the Lorain, Ashland & Southern, which position he held until October, 1916, when he became connected with the A. G. A. Company. He has held the position of northwestern representative of the company at Chicago since last February.

TRADE PUBLICATIONS

LONG LEAF STRUCTURAL TIMBER.—The Crowell & Spencer Lumber Company, Long Leaf, La., has issued a 24-page handbook for the use of engineers. In addition to a description of Calcasieu long leaf pine and an exposition of the trade-mark containing that word as applied to yellow pine lumber, the book contains specifications for yellow pine, tables of working stresses for beams and columns and a copy of the table of allowable stresses in structural timbers used in wooden bridges and trestles adopted by the American Railway Engineering Association in 1909.

CUTTING AND THREADING TOOLS FOR PIPE.—This is the title of catalogue No. 12 of the Borden Company, Warren, Ohio, a neatly gotten up 32-page booklet covering the "Beaver" line of pipe tools. The line includes a number of types and sizes of die stocks and square-end pipe cutters. In the "Beaver" die stocks, the dies themselves are without taper, the taper thread being cut by automatically moving the dies away from the pipe as the threading operation progresses. Since the dies are straight but few teeth are required, and the range of adaptability is materially increased. The catalogue explains the principle on which these dies operate and contains a complete illustrated list of repair parts.

Financial and Construction

FINANCIAL NEWS

BALTIMORE & OHIO.—Following the meeting, on December 19, of the board of directors which was held a week earlier than usual, it was announced that action on the dividend was deferred until the next meeting, which it is expected will be held on January 16. Commenting on the situation, President Daniel Willard stated "that action was postponed because of the present unfavorable conditions, that the board naturally desired to make as large a distribution to the shareholders as was justifiable and it was hoped that there might be some favorable developments within the next few weeks which would support a more liberal action than would now be possible. Notwithstanding the company will have handled the greatest business in its history and will have realized the largest gross earnings, it was evident that the operations of the year would show earnings applicable to the common stock of less than 5 per cent. This possibility was foreseen and emphasized in my statement before the Interstate Commerce Commission on November 5. The gross earnings of the property will exceed those of the previous year by \$12,500,000, but the expenses will be over \$16,000,000 greater—transportation expenses alone being over \$14,000,000 in excess of the year 1916. The increased expenses are due in part to the severe weather conditions which prevailed in February, March and December of the current year, but are chiefly due to the increases in rates of pay, and in the price of fuel and material, which have, so far, been offset only in part by increase in rates."

NEW YORK, ONTARIO & WESTERN.—This company has declared a dividend of 2 per cent on the common stock, payable January 14 to stock of record December 31. The last previous dividend was 1 per cent, on July 24, 1916. In 1909, 1910 and 1911, dividends were paid at the rate of 2 per cent per annum. No dividend was paid in 1912, and in 1913 2 per cent was paid. The New York, New Haven & Hartford owns \$29,160,000 of the \$58,113,983 common stock of the New York, Ontario & Western, having acquired this majority interest in October, 1914, at a cost of \$45 per share. A dividend of \$2 a share on the common stock of the New York, Ontario & Western means \$583,200 additional revenue for the New Haven.

TEHUANTEPEC NATIONAL.—The Mexican Government is negotiating with S. Pearson & Son, Ltd., of London, for the dissolution of this railway, which extends from Puerto Mexico to Salina Cruz, Mex., 188 miles. The road had been operated under a contract extending for 50 years from July 1, 1903, between the Federal Government of Mexico and the firm of S. Pearson & Son. This contract provided that S. Pearson & Son should operate and manage the railway as managing partners for and on account of the partnership, with a working capital of \$5,000,000, one-half of which was to be furnished by each partner. The agreement now concluded contemplates that the government shall acquire the road and also the docks and harbor works now under construction at Puerto Mexico, the contract with the company being cancelled.

RAILWAY CONSTRUCTION

PENNSYLVANIA LINES WEST.—Plans have been made and bids will be asked for soon for improvements to be carried out at Cincinnati, Ohio, on the Cincinnati, Lebanon & Northern. The work will include new inbound and outbound freight stations, office building, team track yards, etc., to cost \$250,000.

PENNSYLVANIA RAILROAD.—Construction work is now under way on the Chester & Philadelphia branch of the Philadelphia, Baltimore & Washington. This branch leaves the South Chester branch near Central and Delaware avenues, Chester, Pa., and is located over private property to Front street. From the latter point it will be constructed through the city of Chester to Ridley Creek, thence via North Essington to a connection with the Pennsylvania Railroad at Girard Point. The general contract has been given to the James McGraw Company.

Railway Officers

Executive, Financial, Legal and Accounting

C. A. Trimble has been appointed assistant general auditor of the Colorado & Southern, with office at Denver, Colo.

H. G. Jenkins has been appointed assistant to the president of the Northwestern Pacific, with office at San Francisco, Cal.

T. A. Hamilton, special representative in the president's office of the St. Louis-San Francisco at St. Louis, Mo., has been appointed controller.

H. A. Toland has been appointed assistant auditor of the Oregon Short Line with headquarters at Salt Lake City, Utah, succeeding T. A. Martin, resigned, effective December 1.

G. W. Thompson has been appointed assistant to the president and purchasing agent of the Detroit, Toledo & Ironton, with headquarters at Detroit, Mich., succeeding A. H. Jones, transferred.

The officers of the Delphos branch of the Cincinnati, Hamilton & Dayton, the sale of which to John Ringling was noted in these columns on November 2, are as follows: John Ringling, president, with office at New York City; C. C. Wilson, vice-president, with office at Chicago; W. J. Bohan, general manager, O. C. VanZandt, secretary and J. M. Kelley, general attorney, with offices at Dayton, Ohio.

Operating

John Fritz has been appointed terminal superintendent of the Southern Railway, with headquarters at East St. Louis, Ill.

P. J. Coleman, trainmaster of the Northern Pacific at Jamestown, N. D., has been appointed assistant superintendent of transportation with headquarters at St. Paul, Minn.

A. Pardoe, car accountant of the Colorado & Southern, has been appointed acting superintendent of transportation, with headquarters at Denver, Colo., succeeding G. C. Randall.

E. D. Moore has been appointed superintendent of the Lansing division of the New York Central, with headquarters at Hillsdale, Mich., succeeding M. L. Reynolds, effective November 15.

F. J. Easley, until recently general manager of the Denver & Rio Grande, has been appointed general manager of the Peoria Railway Terminal Company, with headquarters at Peoria, Ill., succeeding George Walliser, resigned.

A. H. Jones, assistant to the president and purchasing agent of the Detroit, Toledo & Ironton, has been appointed general superintendent in charge of transportation and car service matters, succeeding G. W. Thompson, transferred.

E. H. Harman has been appointed superintendent of the Wiggins Ferry Company, with headquarters at St. Louis, Mo., succeeding Charles Burlingame, who has been appointed superintendent of the Terminal Railroad Association, with headquarters at the same city.

A. A. Freiburger has been appointed assistant superintendent of the Memphis subdivision and the Memphis (Tenn.) terminals of the St. Louis-San Francisco, succeeding E. L. Magers, who has been appointed superintendent of the Western division, succeeding E. C. Lilley resigned.

W. J. McGarry, superintendent of car service of the Lehigh Valley, with headquarters at South Bethlehem, Pa., has been appointed superintendent of transportation, a newly created position, and his former position has been abolished. V. D. Thayer, chief clerk in the car record office at South Bethlehem, has been appointed car accountant.

C. C. Holtorf, assistant superintendent of the Chicago, Burlington & Quincy, with headquarters at Deadwood, S. D., has been transferred to the Casper division, with headquarters at Greybull, Wyo. W. G. Dungan, trainmaster and roadmaster at Orleans, Neb., has been promoted to assistant superintendent of the Alliance division to succeed Mr. Holtorf. These changes were effective December 5.

A. S. Johnson, superintendent of the Terminal Railroad Association of St. Louis, has been promoted to assistant general manager, a newly created position, with headquarters at St. Louis, Mo. Charles Burlingame, superintendent of the Wiggins Ferry Company, St. Louis, has been appointed superintendent of the Terminal Railroad Association, with the same headquarters, succeeding Mr. Johnson.

J. L. Kendall has been appointed superintendent of the Valley division of the Missouri Pacific with headquarters at McGehee, Ark., succeeding D. O. Ouellet, transferred to Ossawatimie, Kan., as superintendent of the Central Kansas and Colorado division. W. F. Kirk, assistant superintendent at Atchison, Kan., has been appointed acting superintendent of the Wichita division, with headquarters at Wichita, Kan. The above changes were effective December 15.

W. T. Wolff, whose appointment as superintendent of freight station service of the Pennsylvania Lines West of Pittsburgh, with headquarters at Pittsburgh, Pa., was announced in the



W. T. Wolff

Railway Age Gazette of December 14, first entered railway service with the Pennsylvania Lines on December 1, 1879, as a clerk in the superintendent's office at Cincinnati, Ohio. On May 1, 1880, he was transferred to the trainmaster's office at Xenia, Ohio, and on October 1, 1881, returned to the superintendent's office at Cincinnati. From April, 1886, to February 1, 1900, he was chief clerk in the superintendent's office at Cincinnati, and from the latter date to August 1, 1902, he was assistant trainmaster of the eastern division of

the Pennsylvania Lines. After six months as chief clerk to the general manager of the Chicago, Rock Island & Pacific at Chicago, he returned to the Pennsylvania Lines on February 1, 1903, as assistant trainmaster on the Indianapolis-Vincennes division. On April 1, 1903, he was transferred to the office of the general superintendent of freight transportation at Pittsburgh as special agent. On April 1, 1905, he assumed charge of the car record office for the Pennsylvania Lines West at Pittsburgh. He resumed miscellaneous work as special agent in the office of the general superintendent of freight transportation on April 1, 1912, and on December 15, 1917, was appointed superintendent of freight station service, with headquarters at Pittsburgh.

Mott Sawyer, superintendent of the Chicago, Milwaukee & St. Paul at Mason City, Iowa, has been appointed superintendent of the Columbia and Idaho division, with headquarters at Spokane, Wash., vice Ezra Clemmons, assigned to other duties. F. G. Hill has been appointed superintendent of the Musselshell division, with office at Miles City, Mont., succeeding Hugh Spencer, assigned to other duties. A. E. Campbell succeeds Mr. Hill as superintendent of the Trans-Missouri division, with office at Mobridge, S. D., and H. L. Wiltrout succeeds Mr. Campbell as trainmaster, with office at St. Maries, Idaho.

C. S. Christoffer, assistant superintendent of the Milwaukee terminal of the Chicago, Milwaukee & St. Paul, has been promoted to superintendent of the Chicago terminal, succeeding P. L. Rupp, transferred. C. A. Bush has been appointed assistant superintendent of the Milwaukee terminals, succeeding Mr. Christoffer. P. L. Rupp, superintendent of the Chicago terminal division, has been appointed superintendent of the Chicago & Milwaukee division, succeeding E. G. Atkins, who has been transferred to Mason City, Iowa, as superintendent of the Iowa & Dakota division, in place of M. Sawyer, transferred. The above changes took effect December 15.

R. E. Woodruff, whose appointment as superintendent of transportation of the Erie, with headquarters at Youngstown, Ohio, was announced in these columns on November 9, was born

at Green Bay, Wis. He graduated from Purdue university in 1905 and in the same year began his railroad career with the Erie as a track laborer. He later served as foreman, transitman, assistant division engineer, division engineer and trainmaster at various points on the Lines West. From March, 1909, to November, 1910, he was general agent at the Chicago terminal; from November, 1910, to May, 1912, he was division superintendent at Rochester, N. Y.; from May, 1912, to November 1, 1916, he was superintendent at Marion, Ohio. On November 1, 1916, he was promoted to superintendent of the Mahoning division with headquarters at Youngstown, Ohio, which position he held at the time of his appointment, as noted above.

C. T. Ames, whose appointment as terminal superintendent at Chicago of the Chicago, Rock Island & Pacific was announced in these columns on November 30, was born at Boston, Mass. He entered the service of the Fitchburg in the general freight department in October, 1892. He served in various clerical capacities, including secretary to the general freight agent, until February 1, 1898, when he was appointed traveling freight agent, with headquarters at Troy, N. Y., where he remained until February, 1899, when he returned to Boston as eastbound freight agent. He left this position on the consolidation of the Fitchburg and the Boston & Maine in the fall of 1900 to become traffic manager of the Hudson Valley, with headquarters at Troy, N. Y. He entered the service of the Chicago, Rock Island & Pacific in January, 1903, in the office of the superintendent of the Illinois division at Chicago and after seven months was promoted to chief clerk, remaining in that capacity until 1907, when he was transferred to the general manager's office as service inspector. In October, 1908, he was assigned to special duties at Little Rock, Ark., by the general superintendent. He returned to Chicago in the summer of 1909 and entered the general manager's office, where he remained until February 1, 1911, when he was appointed chief clerk to the second vice-president, which position he held up to December 1, when he was appointed terminal superintendent, as noted above.

Traffic

S. A. Eddy has been appointed commercial agent of the Chicago, Milwaukee & St. Paul at Winnipeg, Man.

Walter C. Harden, whose appointment as assistant general passenger agent of the Delaware & Hudson, with headquarters



W. C. Harden

at Albany, N. Y., has already been announced in these columns, was born on May 20, 1890, at Troy, N. Y. He was educated in the public schools of Troy, and in 1909 graduated from Lansingburg high school. In June, 1910, he began railroad work in the passenger department of the Delaware & Hudson, and to the following November served as office boy. From November, 1910, to January, 1914, he was rate clerk. On January 1, 1914, he was appointed chief rate clerk, which position he held until his appointment on December 1, 1917, as

assistant general passenger agent of the same road, as above noted.

E. L. Hickman has been appointed general agent of the Michigan Central at South Bend, Ind., effective December 1.

G. V. Omohundro has been appointed commercial agent of the Colorado & Southern at Cheyenne, Wyo., succeeding A. L. Moore.

L. P. Hichman has been appointed commercial agent of the Cleveland, Cincinnati & St. Louis at East St. Louis, Ill., succeeding E. J. Zschirpe.

C. H. Morrill, director of development of the St. Louis-San Francisco, with office at St. Louis, Mo., has been appointed assistant freight traffic manager.

G. W. Vetter was appointed general agent of the Atchison, Topeka & Santa Fe at Tulsa, Okla., succeeding P. T. McKirahan, resigned, effective December 1.

G. F. Scheer, traveling passenger agent of the Baltimore & Ohio, with headquarters at St. Louis, Mo., has been promoted to general agent, with headquarters at Toledo, Ohio.

F. E. Hammann, assistant general passenger agent of the Lehigh Valley, with office at New York, has been promoted to manager of mail traffic and general baggage agent, with headquarters at New York, and on January 1, the general baggage and railway mail departments will be combined. Mr. Hammann began railway work with the Lehigh Valley as a clerk in the passenger department at Mauch Chunk, Pa. He subsequently served as chief rate clerk at South Bethlehem and then as chief clerk to the general passenger agent at Philadelphia, Pa. On April 17, 1905, he was appointed assistant general passenger agent with office at New York, and now becomes manager of mail traffic and general baggage agent of the same road as above noted. Mr. Hammann's entire railway service has been with the Lehigh Valley.



F. E. Hammann

F. E. Lewis, commercial agent of the New York Central at Detroit, Mich., has been appointed division freight agent, with the same headquarters, effective November 15. The office of commercial agent has been abolished.

Norman W. Pringle, division passenger agent of the Lehigh Valley with office at Ithaca, N. Y., has been appointed assistant general passenger agent, with headquarters at New York. He was born at Huntingdon, Que. and began railway work with the Rutland Railroad in the freight house at Rutland, Vt. Six months later he entered the passenger department and served as traveling passenger agent with office at Rutland, on the same road. In 1909 he went to the Lehigh Valley, and served as New England agent at New Haven, Conn., until 1914, when he was appointed division passenger agent, with office at Buffalo, N. Y. In 1916 he was transferred in the same capacity to Ithaca, from which position he is now promoted to assistant general passenger agent of the same road as above noted.



N. W. Pringle

W. M. Orr, of the Queen & Crescent Despatch fast freight line, with headquarters at Cincinnati, has been appointed division freight agent of the Southern at New Orleans, La., succeeding R. H. Tate, whose death was mentioned in the issue of November 9.

The titles of M. R. Leahy and R. Thomson, assistant general passenger and ticket agents of the Chicago & North Western, with headquarters at Chicago, Ill., have been changed to assistant general passenger agents, with the same offices. The title of G.

Bronnell has been changed from industrial and immigration agent to industrial agent, with office as before at Chicago.

A. P. Bean, general baggage agent of the Lehigh Valley with office at South Bethlehem, Pa. and W. T. Heeran, supervisor of mail traffic, with office at New York, have resigned to enter other business. H. J. Bills, district passenger agent with office at Minneapolis, Minn. has been appointed division passenger agent with headquarters at Ithaca, N. Y. succeeding N. W. Pringle promoted.

D. H. Hoops, whose appointment as assistant general freight agent of the Chicago & North Western, with headquarters at Chicago, was announced in these columns on November 30, was born at Chicago in 1869. He entered the service of the Chicago & North Western in 1887 as an office boy and has been with that company continuously since that date, serving as chief rate clerk in the general freight department; chief clerk to the general freight agent, Des Moines, Iowa; assistant general agent, freight department, Chicago; general agent, passenger department, Chicago; general agent, freight and passenger department, Denver, Colo.; and general agent, freight department, Chicago. He held the last named position at the time of his promotion as noted above, effective November 15.

Engineering and Rolling Stock

C. F. Ludington, superintendent of the fuel department of the Missouri, Kansas & Texas, has been appointed fuel supervisor of the Chicago, Milwaukee & St. Paul with office in Chicago, effective December 15.

G. F. Wieseckel, master mechanic of the Western Maryland, with office at Hagerstown, Md., has been appointed superintendent of motive power, with headquarters at Hagerstown, succeeding H. R. Warnock, resigned to go to another company.

L. Clapper, assistant engineer on the Duluth & Iron Range, has been appointed engineer of bridges and buildings. His duties will include those previously performed by B. T. McIver, general foreman of bridges and buildings, resigned, and such other duties as may be assigned him.

R. H. Nicholas, general foreman of the Central of New Jersey at Communipaw (N. J.) engine terminal, has been appointed assistant master mechanic, and W. E. Hardy, foreman at East Twenty-second street, has been promoted to general foreman at Communipaw engine terminal, vice Mr. Nicholas.

L. E. Dix, master mechanic of the Trans-Mississippi terminal, a subsidiary of the Texas & Pacific, has had his jurisdiction extended over the Louisiana division of the Texas & Pacific, from New Orleans, La., to Boyce, with headquarters at Gouldboro, La. J. A. Delaney, whose transfer to Big Springs, Tex., was mentioned in these columns on December 7, was master mechanic of this division.

Special

E. Moore has been appointed insurance commissioner of the Canadian Pacific.

Railway Officers in Military Service

Major N. D. Ballantine, assistant to the vice-president of the Chicago, Rock Island & Pacific at Chicago, has assumed charge of the recruiting of the 416th Battalion of the United States Signal Corps at Grand Rapids, Mich., during the illness of the major of that battalion.

OBITUARY

G. M. Anderton, first lieutenant in the Engineer Corps of the Army, and formerly an assistant engineer on the Illinois Central, died on December 9, on board a United States transport bound for Europe.

GO ROUND GLOBE TO GET HOME.—Traveling from Asia and Africa by way of the United States, in order to reach England and the Continent has become necessary for many since discontinuance of direct steamship traffic. A British steamship which arrived recently at New York brought several mining engineers and others on their way to their homes in England from Cape Town, South Africa, to spend the Christmas holidays.